Medical Adventure

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SOME EXPERIENCES OF A GENERAL PRACTITIONER

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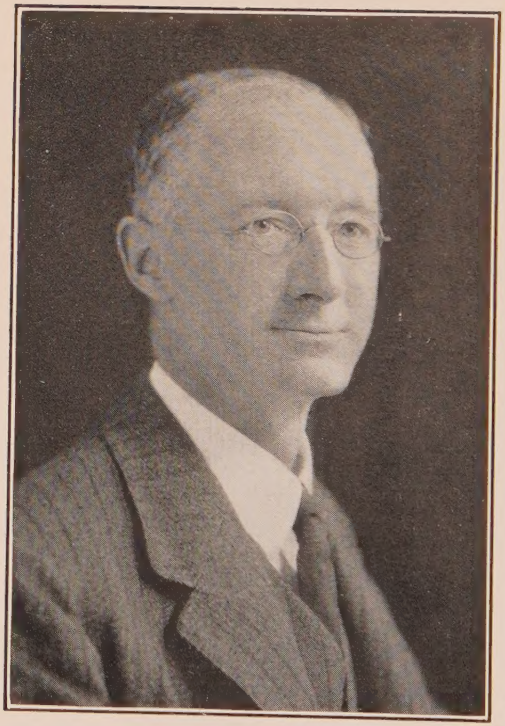

Edward

MEDICAL ADVENTURE

SOME EXPERIENCES OF A GENERAL PRACTITIONER

BY

DR. ERNEST WARD
(M.D.CAMBRIDGE, F.R.C.S.ENGLAND)

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To

X and Y and Z,

to whom the Writer owes

Example, Inspiration, and Timely Help.

FOREWORD

To the Editor of the "London Hospital Gazette."

DEAR SIR,

I hope that both you and ERNEST WARD will forgive me for thanking him on behalf of what I feel sure must be a large number of your readers for his last, and indeed, all his articles.

If there were times (as I seem dimly to remember) when the leisurely precision of his methods in a crowded Receiving Room evoked the callower comments of some of us, let him be assured that we are now sitting in ashes.

I don't know any other paper or person, at any rate, that is giving us quite the same sort of work—of such self-evident value and recorded with so much care and simplicity.

For one reader, at least, the romance of his last letter (probably quite unintentional) lasted well from Holborn to Hampstead on a particularly beastly evening. And perhaps the two-horse barouche, going those extra two miles, the doubts about the bills and the tracheotomy candle were details as well worth recording as any of the others.

Yours faithfully,

H. H. BASHFORD.

December, 1912.

PREFACE

In Australia there is a town surrounded by bush through which broad roads have been driven, leaving between them untouched, barely penetrable forest. Medicine likewise is a tangled maze of problems through which roads have been driven. Along the roads everything seems easy, yet only a tithe of its problems have been solved and the country between is almost unexplored. The student is led along the highways and the solved problems are presented to him. With this many students and practitioners are content, but there are adventurers who recklessly leave the safe and beaten paths to plunge into bush. Some attempt too much and lose their way, or endeavour too late to replan their research on sound lines. Fads cloud the observation of others, and spoil their work. Exploration is mainly individual, and the adventurers may, with the majority of the world's benefactors, be called egotists, but their egotism often goes hand in hand with a sublime altruism, which sets at naught death, life, fame or family, and seeks only to discover truth.

Careful and painstaking observation is the path to progress in medicine, and a much harder one than glib words, book-learning or financial success. I have tried to follow Sir James Paget's advice: "Observe, reflect and describe," and this work is merely a selection of observations and reflections along the by-paths of medicine.

My grateful thanks for permission to republish papers are due to the *London Hospital Gazette*, *The British Medical Journal*, *The Lancet*, *The Practitioner*, *The Journal of Dermatology and Syphilis*, and *The Journal of Outdoor Life*.

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MEDICAL ADVENTURE

CHAPTER I

LEGAL ADVENTURES

EVERY medical man must expect legal adventures. Sometimes, as before the coroner, he will be asked to give evidence of facts and to make a diagnosis, with or without comments, but his statements will not be seriously disputed ; at other times in the civil or criminal courts he may appear as an *expert witness* and give views which may be disputed by other equally expert witnesses. Having acted in this capacity for some years, at one period of a chequered career, it may benefit or amuse others to narrate truthfully a few experiences that befell me, together with the behind scene happenings and considerations arising therefrom.

I have been told that the county courts of the district where I worked are dubbed by the legal professsion "the nursery of perjurers" ; but human nature is so much the same all over the country, and indeed all over the world, that the distinction seems unjust. On one occasion during four years of house appointments at the "London" I remember discussing with a wise colleague, now an eminent psychologist, the wiles we had to encounter when negotiating to purchase practices. He asked : "Are many men fundamentally dishonest, or are we unfamiliar with business methods ?" I replied that both factors come into consideration and the points of view of the vendor and purchaser also. One party is honestly anxious to obtain a very good

price for a rather good thing; the other is equally anxious to obtain a very good thing at a rather moderate price. To this day I still hold that view, though prepared to elaborate it further.

It was the custom in my district for the expert witness to sit alongside his barrister and suggest points and formulate questions to be put to the opposing witnesses. To an impartial witness solely anxious to ascertain the truth this custom seems undesirable, yet there is something to be said for it, as an astute medical witness can sometimes tie counsel in knots with medical terms and take him down all sorts of medical side tracks. I must confess that, after shaking down to the rules of the game, there was much amusement in cross-examining a colleague indirectly and luring him still further down his own side tracks.

(1) The Residuum of Disability.

A collier aged 64 was squeezed between a truck and a roof support in December, 1907; he was unconscious for some minutes and confined to bed for one month. I saw him on behalf of the Miners' Union in October, 1908. There was no evidence of nerve injury, but diagnosed osteo-arthritis of the spine, due partly to injury and partly to the prolonged rest which followed. As usual in these cases he exaggerated his symptoms.

The claim was contested and I appeared to give evidence for the collier.

A number of medical colleagues were present to give evidence in various cases and one of them soon picked me out and introduced himself as my opposing expert. He was glad to meet me as he had heard of my coming to the district, and that I was an old "Londoner." He was not himself a "Londoner," but well knew "M" and "N." whom I knew also. The conversation then turned to the case in hand. It was most interesting clinically, he thought, and had given him much trouble; but he had decided that the man was a pure malingerer, and

wondered what had led me to believe the contrary. I gave the reasons as logically as I could and he seemed much impressed. He said that perhaps he had not given sufficient consideration to these points, and we parted amicably.

Shortly afterwards our case was called, and when his turn came to give evidence he elaborated the experience he had with similar cases and averred he was convinced, after careful consideration, that the man was a pure malingerer. "Of course," he continued, "to a medical tyro, or at any rate one with less experience, such points as—": here he proceeded to enumerate my arguments in the order I had given them to him and pulverized each in turn. My jaw certainly dropped to hear my beautiful evidence discredited in advance, but my back became perhaps rather more rigid, and luckily, very luckily, his side batted first.

When my turn came to appear at the wicket I astonished his counsel, who was certainly in the know, by agreeing with him that the points enumerated were inconclusive; but I then produced others which were new to him, and finally concluded that the man was certainly exaggerating his symptoms, "a malingerer if you will, but there remains a residuum of genuine disability." This phrase won the case. The elderly judge complimented me on my evidence and concluded by agreeing with me that in spite of everything there was a residuum of genuine disability.

This was my first introduction to the wiles of compensation work, and it made me realize, after giving my re-sorted evidence, some of the temptations of the expert witness who is anxious to be truthful and scientifically accurate, but is perhaps biased by what may seem an unfair attack and is tempted for that reason to interpose things which might well have occurred, but did not actually happen.

It also impressed upon me the power of a phrase, a jingle of words. It was the phrase which caught the judge's ear and influenced his judgment.

It is astonishing how much an individual, a class, a nation, or even the world is similarly influenced for good or evil. In recent times we have seen how the "freedom of the seas" came near to lose the war for us, and how "work or maintenance" stirs the mass of workers in so many countries. We see on all the hoardings how well this is recognized by advertisers; let them only invent a good slogan and the goods are sold. "Still going strong," "builds bonny babies," are sayings we cannot forget, however much we wish.

An apt phrase is like fire, a good servant but a bad master; and like the man in the "Ingoldsby Legends" who raised the devil to do his work, and was later destroyed by him, a rhetorician is often captured by his own phrase, which goes to his head, and suspends for the time the whole logical working of his mind.

Compliments from the judge are sweet to the witness, but sweets are not always easily digested, as will appear later.

(2) Murder.

A telephone call! "Jones, of 33, Paradise Bank, has cut his daughter's throat, will you please go at once." My accident case, always ready, is forthwith strapped to the bike and in a few minutes the house is reached. A winter evening, dark, wet and windy, with two inches of mud on the roads.

On the ground floor the family occupy two rooms, almost bare of furniture, with no carpet, no pictures and everything in disrepair. I walk through one room, dark but densely packed with people, silent as I pass. A candle is lighted in the largish second room, also packed with people, and there on the floor, on a small space at the centre, a police officer supports on his knee the head of a fair-haired, 7-year-old girl, breathing but desperately pale, blood is over the floor, the fair hair is matted with blood. I kneel by the child, feel the pulse and glance at a punctured neck wound; then I look round the room in the flickering light and see tier upon tier of tense eager

faces, not a word spoken. The sort of scene previously familiar to me in nightmares.

I rise, clear the room, the police call a cab, and a red-haired constable carrying the child in his arms, we leave for the hospital. On the way the shallow breathing ceases, and when we reach hospital the child is dead.

The penknife used to inflict the wound had partly divided the right common carotid; bleeding had ceased when I arrived but had been too severe for the child to survive.

From the hospital the body was taken back to Paradise Bank, where the mother's greed overcame her, conceivably defective, maternal instincts and she charged 2d. admission to any who wished to see the murdered child. There was a good attendance, and in those days no entertainment tax.

Next the inquest. It was the first murder in that district for eight or ten years and the Town Hall was packed. It appeared that the father, a labourer and a drunkard, led an unhappy home life, but had five children and this was his favourite. For some reason, not yet forthcoming, after a quarrel with his wife he had called the child, taken her on his knee, produced a penknife, which he had sharpened on the doorstep, and cut her throat.

My evidence seemed unimportant, but the solicitor for the defence, anxious to catch at any straw, subjected me to a severe heckling. Why was the child taken to hospital? Did I know there were good houses near by where anything necessary could have been done? And so forth.

Then came the Police Court trial. There were many dramatic outbursts, possibly ungenuine as these scenes so often are. The wife gave evidence, which I am informed was legally incorrect, but it was done. She wept, the husband wept. She left the witness box crying, "Oh, John, John dear, why ever did you do it?" and rushed across the court to the prisoner. The police

were taken by surprise, she broke through them, flung her arms round her husband's neck and kissed him again and again till forcibly separated. Again I undergo a severe cross-examination and for half an hour am compelled to thrill the court with eloquence of doubtful utility.

After this a long wait till the Assize and the final trial in the county town. Unexpectedly I was called to give evidence before the grand jury, who wasted an hour of their valuable time investigating this case, which would certainly have to go for trial in the usual way, however long they discussed it. I took my seat at the end of a long table on either side of which sat grave, more or less important-looking, and certainly important-feeling men. After a suitable delay, while the jury discussed previous evidence, I was questioned by one of them, very much *de haut en bas*, as to what was the cause of death, and whether, if the child had not died, it would have been possible to save it. I endeavoured to give appropriate answers, and the case was, in due course, referred to the main court.

I appeared for the prosecution with another doctor, who was to rebut the medical expert for the defence, who would say the man was insane. Our solicitor was a round, red man, who surely had a small, red kidney, and possibly a cirrhotic liver; our counsel was young, tall and dolichocephalic, very ready to be angry or to sneer. The opposing solicitor was young, able, pushing and verbose, the barrister tall, suave and dignified, with a quiet, very pathetic voice.

A good judge, but the shorthand expert told me not good from his point of view, for he was so anxious to be kind that no prisoner appealed against his sentences, and it was, therefore, never necessary to ask for a shorthand report of the proceedings.

The evidence heard before, except that of the wife, was repeated by the witnesses, including a bright 12-year-old girl. My time in the box was short; it was the alienist who held the field and explained at great length

all the peculiarities which made him believe the accused was insane. The man had made mistakes lately in mixing mortar, and on one occasion he had been noticed staring at mortar instead of getting on with the mixing. His evidence showed clearly that anyone who commits an abhorrent crime must be insane, or he would never have committed an abhorrent crime.

The counsel made their speeches, our opponent collected, slow, and very sad ; our own barrister angry and contemptuous. He ventured to say that such evidence of insanity would be laughed out of any London court. The judge, however, thought that an exaggeration, and pointed out the various hits made by the alienist. Verdict: *guilty but insane*—probably the man is still at Broadmoor.

During the whole trial no one mentioned the motive, which most of us knew all about. The prisoner's wife had not a good reputation ; the 12-year-old child who gave evidence was illegitimate, born before this marriage. It was reported to me by neighbours that on the night of the crime there had been a bout of husband-baiting. This was always easy, for she had a facile tongue, while he was an animal type, prone to anger but with no gift of expression except violence. The husband had tried to keep cool by fondling the 7-year-old child, to whom he was attached, and the wife had said, " Oh, yes, go on making a fuss of Liza, but remember *she isn't yours*." After that the murder.

Perhaps the alienists and sentimental considerations have too great a place at murder trials, but it is consoling that we are better in this respect than some other countries. Public emotions are often penny wise and pound foolish ; 100,000 cruel deaths in Russia hardly cause an eyebrow to lift, while the execution of a thorough-paced villain, like Landru, seems to arouse a great deal of sympathy.

To deal with emergencies every general practitioner should have an accident bag always ready. It is as important as the midwifery bag, can be used for minor

surgery, and saves much worry. I kept an accident case, a vaccination case and a diphtheria case; a cigar box will contain everything for these emergencies. Each individual must suit his own taste as to details; the one *essential* point is that they must be cleaned and put ready *on his return from the visit*, and never left to be hurriedly repacked after the next call has been received.

(3) Three Wounds.

A middle-aged collier received an injury to the right forearm, which suppurated and left an extensive ulcerated area. The wound skinned over irregularly, until of the original bare area only three small patches remained. He was anxious to work, and his doctor signed him off the club, but the arm again became inflamed, so that, many months after the injury, I was called to give evidence on his behalf.

It was usual for an expert witness to discuss the case with the practitioners who had attended the patient in order to ascertain what they were going to say and strengthen the weak points. Unfortunately I neglected this precaution, and both practitioner and assistant were badly heckled because they had signed the man off when, as they said, he was not really fit for work. They described the healing of the wound accurately enough, and the three small places that were left. This the judge could not understand, and asked repeatedly how one wound could possibly become three.

It fell to me to explain these points, the first of which was easier than I expected. The date when a patient was able to work was always open to discussion, and the difficulty often was not to keep a man on the club but to get him to work. A practitioner anxious to act honestly might well sign off a man before his wound had completely healed in the hope and expectation that the healing process would continue. Many wounds healed well although the patient never ceased work. But the one wound that became three I could not get the judge

to understand. I sketched the process on paper; I used similes, such as a pond of varying depth drying in summer time, until three pools remained instead of one pond. It was all of no avail and we lost the case. A medical referee and rival practitioner, it must be said, sat with the judge.

My one score in cross-examination here was after a question from their barrister as follows: "Remembering, doctor, that the leucocytes of the blood-stream emigrate into diseased tissues, and that the healing process is accelerated by a proliferation of the epithelial cells, the same cells, indeed, which in the embryo, by a marvellous mechanism, cover the body with a dense protective layer; bearing in mind also that bacteria impede the processes of nature, and sometimes attack the body from without and sometimes from within, depending on the opsonic value of the serum. Do you think it likely that under such circumstances it is probable, possible, nay conceivable, that it can reasonably be maintained that the condition of the tissues was here due to an injury received on March 8 last?" It was a long question. At times the words seemed difficult, but he had been well coached, and finished flushed and gratified. Turning to the judge, I replied: "I did not quite follow the question, your Honour"; then to counsel, "Would you mind repeating it?" And he was stymied. This amused the judge and raised our hopes, but we lost.

The idea of coaching fellow witnesses always seemed repugnant to me, yet here was some justification. The case seemed a good one, though healing may have been impeded by the man's habits, and the witnesses were perfectly honest, yet they floundered under the questions of an astute lawyer. The medical men concerned would hesitate before signing off another patient, yet their action had been correct and straightforward. Certainly they would have done better if they had not been annoyed, and of this the opposing counsel was well aware. Righteous indignation may be carried too far.

It would pay all great firms to ensure scrupulous

attention to small wounds. It is likely that quite half of all compensation payments have to be made on account of the suppuration of trivial wounds, which could easily have been prevented by equally trivial immediate treatment. Once they suppurate, however, no one can foretell how long they will take to heal, or what sequelæ may follow. I was once medical officer to a firm which fully recognized this, and I profoundly admired their organization. The men's wages were always a round sum, say 30s. plus *x*, which might be 8d., which went for sick pay, to pay for the doctor and nurse, surgical appliances and special treatment. Each department had its ambulance team to whom I lectured, and was paid for it. There was a shield to be competed for annually. So keen was every workman on first aid that when a deaf employee had both thighs cut off by a railway engine, his femoral arteries were digitally compressed in a few seconds. No blood was lost and he survived. This enthusiasm had its humorous side. I remember a young man who fell a short distance on to a roof. I found him soon after in the works surgery, spreadeagled on the table, arms and legs bandaged from extremity to base, and *a large ice bag on his abdomen*, exposed for the purpose. He looked, and no doubt felt, uncomfortable; there was nothing else the matter. I praised the resource of the ambulance men, they looked pleased; then I removed the ice bag and the man looked pleased. He was sent home for a day or two to encourage the dressers, and then resumed work.

Another of this firm's wise schemes was to make the Medical Officer to the Men's Club report briefly every week, in a book kept for the purpose, on each man off duty on account of accident. This ensured a careful weekly consideration of the working capacity, and the firm paid specially, and amply, for it.

(4) The Clicking Clavicle.

A collier of 18 was squeezed between a truck and the wall of the mine; a severe injury to the left shoulder

resulted, followed by stiffness and disability. I saw him six or eight months later, the shoulder-joint was almost normal, but there was grating in the left sterno-clavicular joint, and now and again a loud click. I diagnosed traumatic osteo-arthritis of the affected joint, and was asked to give evidence on his behalf. Against me there appeared a galaxy of experts (three); our side batted first, and the luncheon hour intervened between our evidence and the defence. Various points were raised by them, and attention was finally concentrated on the click, with which the leading opposition expert dealt ably and at length. He was a surgeon with a considerable reputation in a large provincial town. A click in any joint, he pointed out, was a most deceiving sign. The noise drew the attention of the patient, his doctor and all others concerned to the joint; yet it was a common manifestation in perfectly healthy joints. He himself had a click in the right shoulder, and while waiting in an ante-room he had searched the joints of his colleagues and others present, and found that practically all had a click in some or other joint; even their solicitor had had to confess to an incorrigible click in the left ankle. (Laughter.) This won the case for them. I still think my diagnosis was probably correct, although, of course, open to discussion. The age of the patient was important. I was not present when the clicks were discovered, and am a little uncertain how many really were found and how many evolved in the witness box.

(5) Traumatic Tuberculosis.

A workman, aged 28, fell forty feet on to a roof in November, 1907. He was unconscious for two hours, and on recovery had lost the use of his legs. Incontinence of urine followed (the exact type is not noted), but cleared up during the four months the patient was confined to bed. In May, 1908, he began to get about again, but suffered from frequency of micturition and shortness of breath.

He was seen for the Insurance Company, in October, 1908. The reflexes and sensation were then normal, and no abnormal signs were discovered in heart or lungs. A complete recovery in time seemed probable. Soon afterwards, however, hæmoptysis occurred, and the man died in the autumn of 1909 of general tuberculosis.

I was present at the autopsy; we noted an old fracture of the lumbar spine, with much perispondylitis, but no tuberculosis of the spine, only general and pulmonary tuberculosis.

I appeared for the Insurance Company, who claimed that the tuberculosis was not caused by the injury. The case was considered important, and a special barrister was sent from London by the Company

I was introduced to him by the Company's Secretary in a private room at the court. He was a tall, stout, serious, impressive, business-like man, and was seated at a bare, business-like table. He rose and shook hands with me in a business-like way; we then seated ourselves and proceeded to business. "Well, doctor," he began briskly, "*you will say* that when you saw this man in 1908 he had no symptom or sign suggestive of tuberculosis, which must therefore have developed subsequently. *You will say* that tuberculosis never results from an injury, and that no such case has ever been known. *You will say* that the man's personal habits were likely to induce tuberculosis. *You will also say* that he has been exposed to infection since the accident, and no doubt acquired the disease in that way." Here I interrupted, "It is good of you to tell me what I will say before hearing what I propose to say, but you have not yet quoted anything that I can truthfully say, and even an expert witness must make certain that his observations and opinions have some relation to the truth." At this he threw down his pen impatiently, exclaiming, "Then we lose the case." The Secretary intervened to pour oil on the troubled waters, and the interview continued smoothly.

The case lasted several days. My mistake was, that,

having had a good deal of expert experience, and being handicapped by compliments from the bench, I was too confident and too dogmatic. I had to admit in cross examination that trauma might light up a pre-existing tuberculosis, although the period which had elapsed before it developed made it unlikely in this case.

Judgment was reserved, but we lost.

I remember an occasion when Mr. Rigby, as he then was, irritated by his house surgeon's insistence that he could feel the head of the pancreas, quietly remarked, "But, Mr. X, the pancreas is not unique in possessing a swollen head." On this occasion perhaps I suffered like the pancreas. I think now that the judge's decision was right, and that the man's death from tuberculosis was indirectly due to the injury. I was on the wrong side, and my views were biased unconsciously, it must be said, by the fact that that side was employing me.

The attitude of the barrister shows how difficult it may be for the expert witness to keep to the truth and yet to appear at his best.

The rising physician, surgeon or practitioner does not realize sufficiently that, although sisters, wives or offspring may forcefully criticize our failings the world at large does not bother to do so; they sheer off and say nothing, sometimes the cause of offence may be so trivial as unpunctuality at a dinner party. One or more patients may be dissatisfied and transfer their allegiance, yet the practitioner may hear nothing; on the other hand a new patient may arrive and talk volubly of our virtues and of the defects of a rival, to whom, by the way, he may owe a considerable bill. So the material for head expansion is provided without adequate counterpoise. It is, of course, no use worrying too much about this, or, indeed, about anything; but it is just as well to bear it in mind.

(6) Head Injury.

My partner at that time, "Dr. Smith," was a leading member of the profession, and may his ashes rest in

peace. He was a man who had fought his way and succeeded in the face of great difficulties; he owed his success to a rare business ability and shrewdness. He was an excellent raconteur and the best of company; short and stout, with a large bald head. An artistic friend told me that physically and mentally Smith reminded him of a round and shining pebble, smooth, hard and polished. Smith was usually employed by the Miners' Union, to which he introduced me as expert witness. The Union solicitors hurt his feelings by seeking other help, and he was therefore pleased when he had to give evidence against them in the case of a man who had died a year after fracturing his skull. "I'll show them," said he, "that they can't do without me." He returned looking radiant, and I was not surprised to learn that he had won his case. I asked what evidence he had given, for it seemed to me that such a severe injury to the head, followed by permanent invalidism, had made his task a difficult one. "I gave no evidence," he replied, "the practitioner in charge of the case gave my evidence for me." I begged him to tell me the secret. He rarely gave away such secrets, but that evening, flushed with success, he explained.

He had attended an autopsy conducted by the practitioner, and subsequently lunched with him; the case had been considered the same day. He had discussed with the practitioner the after-treatment of head injuries, and they had concluded that everything depended on the resourcefulness and ability of the doctor attending the patient; granted that he knew just what to give, and when to give it, there was no reason why the results should be so grave as usually supposed. Smith was astonished to find that the doctor used a treatment advocated by his friend H ——, the leading authority on such injuries, which H —— regarded as a very personal tip. Another remedy which had been employed was one about which another well-known surgeon had spoken, but of which Smith had had little experience. They looked at the brain and skull together, and decided that,

bearing in mind the treatment employed, no reasonable observer could suggest that the head injury was in any sense the cause of death, which was due to cardiac weakness (lesion not specified). This evidence was given by the practitioner so ably that Smith never appeared in the box. He avowed the process was much easier than had been anticipated.

This and the first story show the disadvantages of the method in compensation cases so warmly advocated by Sir Clifford Allbutt, which is the custom, he tells us, in Yorkshire. The opposing medical witnesses consult together before the hearing, and present a solid professional front to the court.

The use of flattery as an aid to business contains nothing ethically wrong and is universally recognized. "Brown, you're a splendid fellow, lend me half-a-crown," is only the same thing in a minor form. No medical man who has been through hospital would be caught by a fellow man (I say advisedly fellow *man*) telling him how good-looking he was or how nicely he dressed, but professional flattery is quite different, and probably most of us have been "had" that way; I certainly have. The young doctor goes down to view a practice or partnership which his colleague is rather anxious to sell. He tells him he is getting old and not so up-to-date as he used to be, and would be very pleased to be associated with a young and virile colleague, thoroughly abreast of the times. He asks the visitor to see patients with him, and adds, perhaps, "they were rather keen that I should call in old So-and-So, but I asked permission to let you see the case with me first, as it seemed that you would be more likely than he to give us new light on the subject." And if old V. is called in subsequently, the matter is readily explained. Our colleagues are not the only ones to try this rather subtle stunt.

Our relations with this Miners' Union were a constant source of worry. We were paid 10 guineas a day for giving evidence in a single case, 5 guineas each if more than one case. Our bills were paid by the Union

secretary, never by the solicitors concerned. The bills, it seemed to me, ought to have been closely scrutinized, but they never were. There was a settled ceremonial when pay day came. The secretary arrived, Smith greeted him cordially, a bottle of champagne was broached, and they were closeted together for some time. A cheque for payment in full changed hands, and finally the secretary made some remark about going to the market to buy chickens and left, jingling three, five, or more, golden sovereigns. As soon as I noticed that the amount entered in the cash book was £3 to £5 less than the cheque, I tackled Smith. I pointed out that the method, translated into English, was an arrangement to share with the secretary the proceeds of robbing the men; if there was to be any discount, which would be quite reasonable, it should be open, and the cheque correspondingly smaller. Smith replied that I was quite inexperienced in these matters and did not understand the universal custom. If we did not get it the solicitors certainly would; moreover, all expert medical witnesses did the same. I named two surgeons of seeming integrity and asked if they did this. He was perfectly sure they did. I doubted it, but said that, whether they did or not, it was obvious that we could not. Smith caved in, admitted error, and even apologized and thanked me. Being young, I thought the trouble ended; but next year the same discrepancy arose, and I found that in the meantime Smith had produced the sovereigns from his own pocket and said nothing; in any case, as predominant partner it affected him most. At the end of a year he thought my experience would have sufficiently increased (a euphemism for progressive moral sclerosis), and he tried again. This time also I appeared to win, but it was only apparent.

Other forms of corruption were equally difficult and astonishing. For instance, we lived in a seaport town, and a sea captain would bring to me a man that I would treat, say on two occasions, and send in a bill for a guinea. The captain would then call and say, "Here's

your guinea, doctor, and please give me a receipt for two guineas." I refused and told Smith about the offer as an amazing incident. He replied, "And did you give him what he asked?" "Certainly not." "Well, let me tell you that you will never get this boat work—and it's quite a valuable branch, if you don't meet their wishes in the matter. It's always done!" Then again, payment for works' clubs was a bone of contention. It was worth about £600 at the standard rates; Smith considered we could increase the payments, "and in that case, Ward, it would be worth our while to give a *substantial douceur* to M., N. and O.," naming the men's leaders. He watched me carefully and continued, "You would have nothing to do with it; it would be much better just to leave it to me." This did not seem sufficient, so he went on, "The whole thing is beastly disagreeable, Ward, it is very difficult for you and me to do such a thing."

When I had heard him through it was my turn: "No, Smith, not difficult," I said (he brightened visibly), "impossible." And there the matter ended. No doubt, however, I was sufficiently involved in corruption to serve a term of imprisonment, so these instances must suffice.

Smith and I parted company after a few years, without undue friction, and we remained on friendly terms until his death. It must be said that in the matter of research, the purchase of instruments and so forth, he always gave me cordial support, and he taught me a very great deal of the world and its ways.

(7) Traumophilia.

A girl, aged 16, caught her right hand in a machine during September, 1908, and tore loose a flap of skin on the dorsum. It was stitched down but subsequently sloughed. In June, 1909, there was an ulcerated surface the size of a sixpence, and a scarred surface the size of seven shillings. I prophesied total incapacity for six

weeks and partial for five months, as the fingers were stiff from prolonged splinting. In October the former wound had healed, but there was a new one to the inner side, and it seemed almost certain that it was being kept open artificially. She had the resigned, cherubic face which is sometimes associated with such procedures. I advised observation in hospital and she was admitted, but would not stay. During the next six months we chased the ulcer all over the back of the hand; as soon as it healed in one place it reappeared in another. Finally, about October, 1910, I appeared, among a talented company of experts, to give evidence against her. The defence called only one medical man, who had not attended her long, for she frequently changed her allegiance, and we won easily. The verdict was a just one.

She received 6s. a week while on compensation and 8s. 6d. while at work. I do not think the case was pure malingering; it contained also an element of what might be called *traumophilia*. The condition is met with in both sexes, but mainly in young girls, and leads them to take a subconscious delight in injuries, especially surgical operations. I must leave Dr. Culpin to trace the process through the mazes of the subconscious mind, but it is met with often enough in minor forms, and nearly every surgeon of any experience has been deceived at one time or another by the major form. In my limited experience I have encountered quite a dozen cases. One girl, aged 24, whose history I followed from hospital to hospital for some ten years, underwent four major operations on one arm, removal of both breasts, a complete mastoid, a laparotomy, and an intra-nasal operation. No doubt every surgeon concerned genuinely believed his operation to be necessary. The case was published many years ago. The disease belongs to the complex group labelled hysteria, but is sufficiently well defined to merit a special name. An alternative name would be the "operation habit," for often a first, and necessary operation, proves the starting point of the disease.

(8) The Stranger.

A negro, aged 47, a casual labourer with a casual mentality, suffered a contused wound of the left index and middle fingers. The wounds received no attention for three days and suppurated. Thecal suppuration followed, and the deep flexor tendon of the middle finger sloughed, causing considerable stiffness of the hand. I attended the man in hospital and later. There was no trial, but several interesting points arose. He had been employed a day or two only; he was not fond of work and made the most of the accident. He was also disinclined to start light work for fear he might lose his compensation. Moreover, the company gave him cause for suspicion. They had had a number of accidents and were threatened with an increase in premium, and here was a man who did not belong to a big union. Possibly the directors had in mind the quotation, "he was a stranger and I took him in." Much indirect pressure therefore was brought to bear to induce me to say there was no permanent disability and the man could work; but obviously a sloughed tendon did mean a permanent injury, and rough work would be sure to damage the somewhat extensive, thin scar tissue. Once, even, the managing director asked me, when at the works, to see him, and spent a long time trying to persuade me to report the man free from disability. He introduced the subject tactfully and first tried flattery, saying how fortunate the man was to be under my care. Then he reasoned with me, quoting the great experience he had of such injuries at the works and how exceptional permanent disabilities were. Finally he almost threatened me, remarking significantly that works patients were not the only ones I had to deal with (his family were patients of mine). He spent so much valuable time on the matter that I was forced to the conclusion that he had announced that he "knew me personally and would easily settle the matter," and that therefore he did not like to admit failure. In the end a

large union took up the case and it was at once settled, which shows the great advantage to the claimant of such organizations when dealing with a large industrial concern. But for that and the compensation laws, this man would certainly have been treated unfairly.

Prolonged disability after uncomplicated fractures of the femur, tibia and fibula, and especially of the os calcis, is often unjustly called malingering. The editor of a leading medical journal once told me that he fractured his ankle thirty, or it might be forty, years ago and that it still felt "like a testicle." A little tender, I gathered, when he trod firmly upon it.

(9) A Noble Impulse.

When I was house-surgeon at the London Hospital, a robust bookmaker of about 30 was admitted with a fractured fibula at the level of the external malleolus It was put in plaster and he went to the out-patient department. The injury was attributed to a kick.

In due course I was asked to give evidence, as he was suing the man who had kicked him. There was much preliminary sparring about fees, in which I was certainly worsted; and one Wednesday I found my way in top-hat and frock-coat (we did wear these things once upon a time) to a North London court. I overshot my station on the tube, owing to absorption in the *Evening News*, and so arrived late. Our barrister met me and asked about the case. He would not have the man called a *bookmaker*. I had made a mistake, the man was really a *motza* (passover cake) *baker*. Conceivably, counsel suggested, the man had been upset when I saw him, or had a little cold, and pronounced motza-baker so that it was mistaken for bookmaker. I did not agree but considered the point unimportant. The elaborate lameness and groans of my patient as he hobbled about the court did little credit to our treatment, and not much good to his case. It appeared that there were two gangs, perhaps the forerunners of the present-day race gangs,

who alternately laid in wait for and wiped the floor with their rivals; stabbing and shooting were not then quite so popular as now. The leader of the other gang was a big stout man, with a large flat face, a low collar, and a large flat tie; he admitted the assault, which he considered merely a payment of what was due. My patient had been knocked into the gutter and he had kicked him hard. The man had caught hold of his leg, and cried, "Gorblimey, my leg's gorn." Whereupon the flat-faced man had a noble impulse. "Blank me," he cried, "if his leg's gorn, I'll pay a cab to the 'orspital," which he did.

This generous act was not disputed and we lost the case.

In those days we certainly treated fractures with too much immobilization. Nowadays a bandage and immediate active movements would probably give a good result in a week or two. Delbet's ambulatory treatment for fractured legs and for Pott's fractures may yet have a future in this country.

These incidents, of course, took place some years before the war and do not pretend to be a study of universal professional customs, but only a narration of personal experiences.

The first duty of an expert witness is to be honest, whether he wins or loses, and incidentally this makes his task much easier. Honesty alone, however, is not enough; even saints or heroes may have their pockets picked, and sanctity is no protection in the witness box. He must also be level headed and alert, with considerable knowledge of human nature, some experience and some power of expression. Many a man sued by his wife, who appears to the newspaper reader as a full-blooded scoundrel, might with adequate power of expression seem a saint in thin disguise. There is no form of dishonesty or corruption for the early stages of which

plausible arguments cannot be found. An expert must therefore have an inflexible ethical code of his own, unaltered on the one hand by fierce opposition or on the other by the far more dangerous weapons of blandishment and plausible argument. The slope is steep and slippery; once a man starts sliding it is difficult to stop. In my opinion, the majority of habitual expert witnesses, however high their professional or social status, have done a great deal of sliding. If a medical man, young or old, is strong enough to maintain a consistently high standard of conduct his example is of incalculable benefit to the world. For whereas the parson *preaches* to saints, the doctor *meets* the sinners. Unexpected difficulties constantly arise in the witness box, as in everyday practice and in everyday life. It is said that Stephenssen, the Arctic explorer, always met a polar bear, even alone on an ice-floe, as if it were a friend. This is a golden rule for all difficulties: *meet them as if they were friends.* Perhaps this is only an anglicized version of "*tempora lento amara risu.*"

County Court procedure could certainly be improved, Much depends upon the judge, but he cannot have an extensive knowledge of medicine, and the most useful reform in all medical cases would be to secure the services of an unbiased, impartial medical assessor to sit with the judge. This might well be done by the Regional Medical Directors appointed under the Insurance Act.

CHAPTER II

ECZEMA, EXTERNAL AND INTERNAL.

THE cases narrated here were investigated to throw light on the almost universal tradition, that it is dangerous to cure and thereby "drive in" an eczema; and that *vice versa*, a patient with bronchitis, or some internal complaint, is better when an outbreak of eczema takes place and "the disease comes out." The tradition is obviously valuable to the quack, because it is easy to irritate the skin, and an eruption on a healthy skin area during the course of the treatment goes a long way to satisfy the ignorant that a cure of some obscure complaint is beginning. Like all traditions, it is founded on facts; many threads of speculative or scientific interest can be sorted out from the tissues of superstition and of prejudiced or imperfect observations.

Support is given to this tradition by the specific fevers, especially measles, in which the temperature falls and the patient feels better when the eruption occurs. Why this should happen is perhaps worthy of research.

The eruption of herpes facialis occurs in febrile conditions and often persists for a few days after the slight fever has subsided; this again assists the tradition. It would be interesting to know why this eruption usually appears on the face, and yet a few patients get it regularly on the arm or buttock. If we could solve this simple problem the results might be far-reaching. Some people suffer from spasmodic asthma, with or without hay fever, and are liable to attacks of urticaria, which may be coincident with the asthma, but may also occur as the attack is subsiding. The patient then seems justified in believing that the remedies "have drawn the asthma out."

Case 1.—A boy, aged 5, is not rickety, has been properly fed and is healthy in every way, but has been under my treatment on and off since birth, for eczema or bronchitis, or both. He suffered from a very intractable eczema up to about 3½ years, the first attack being at 12 months. The first bronchitis was at about 2½ years, and he still suffers from frequent attacks, which begin suddenly in the night, like asthma, and last for a few days with a temperature raised to 101° or 103° F. ; there is a copious bronchial discharge which the child has now learned to expectorate. He has also had four separate attacks of pneumonia and is liable to attacks of diarrhœa.

The parents believe that the eczema and bronchitis are definitely related, and that when one goes the other comes. It is probably true that both have the same cause, but during the time the child has been under treatment I have never found that the attacks of eczema have increased in the absence of bronchitis, or *vice versa*. He has "grown out" of the eczema, and it is to be hoped he will likewise "grow out" of the bronchitis.

Case 2.—A girl, aged 4, under my treatment for about twelve months, an irritable and nervous child, unlike the last patient.

The parents tell me that the child has had eczema on the legs and face almost since birth, and when cured "asthma comes on": that is to say, difficulty in breathing and a wheezing cough which lasts for a few days.

When first seen there was an extensive eczema with pus infection. This was completely cured in a few weeks and I awaited the asthma, but it did not appear. The parents told me that until now she had never been well from eczema without suffering from "asthma." The child has subsequently been treated for a relapse of the eczema and for an intercurrent bronchitis. On close inquiry we find that the severe attacks of "asthma" date only from the age of 2 years and 9 months. Before that there was "croup" but no "asthma." There had been four or five attacks of severe bronchitis altogether. The "asthma" was worse in the winter and the eczema worse in the summer, but the eczema never entirely disappeared during the winter. The case seems to be very similar to the first one.

We conclude from these causes that both conditions probably have a common cause, but that the healing of the one has no definite relation to the outbreak of the other. It is clear why these parents believe that the eczema "goes inwards," and how their belief is supported :—

Firstly the untrained observer readily fits his observations to his preconceived beliefs.

Secondly.—In the belief that to cure the eczema will make the asthma worse, no well-directed attempt is made to cure the eczema while the asthma is present.

Thirdly.—In summer, when the vascularity of the skin increases, eczema is more probable, while in winter bronchitis is more likely and the eczema may vanish.

It is curious that in both these cases the bronchitis started at a later age, and that, although the eczema almost defied treatment up to a certain age, it then quietly and almost spontaneously disappeared.

In the adult, spasmodic asthma with little secretion is associated with urticaria; in these children an eczema occurred with attacks of moist bronchitis. In this connection I may quote:—

Case 3.—A woman, aged 37, was seen on October 20, 1911. The face began to swell on the previous day and there was irritation and burning. She had had one previous attack of acute eczema, and two attacks of "nettlerash," without any definite relation to food. The woman's face and upper chest were covered with an acute, weeping eczema, and there was a patch of more chronic eczema on each shin; there was an urticarial eruption on the forearms.

This, with the other cases, suggests that some forms of eczema are closely related to urticaria; perhaps the two have a similar nervous origin, which produces different rashes on the skins of different patients.

CHAPTER III

OBSTETRIC ADVENTURES

(1) Miscarriage in a Virgo Intacta.

A MORE correct, but less attractive, title would be miscarriage with unruptured hymen.

In December, 1907, I was called to a young married woman, aged 22, with symptoms and history suggestive of a miscarriage. When I attempted to examine, per vaginam, it was some time before I could find any opening. At last I managed to find one through which, with an effort, I passed my index finger and removed a three months' miscarriage piecemeal. I went home not quite sure whether I was congenitally stupid or merely not quite awake. A later examination showed an unruptured hymen.

A few days after this adventure I left the district to take up a hospital appointment and did not hear anything more about the patient until two years later her husband came under treatment for syphilis. In December, 1909, I removed the wife's hymen by operation and later on she came under treatment for syphilis, so that the case is of sociological as well as of medical and medico-legal interest.

Similar cases have been recorded, but it is remarkable that conception should be possible under such conditions.

(2) My First Face Presentation.

While acting as *locum* in the interval between hospital appointments I was called to my first face presentation. The patient was a nervous primipara of about 32. The labour was long and troublesome, thirty-six to forty-eight hours, and much time was spent in running in and

out of the house. Ultimately, after prolonged waiting, the chin rotated forwards and the head was born, but at this point things hung fire again. For some reason, instead of hooking out the front shoulder, I pulled on the head. The pull seemed to me gentle, but I did pull, and felt, rather than heard, a little crack. The child was born but could not be resuscitated.

(3) Turning.

Conditions in private practice were usually very unlike those in hospital.

Early in 1913 I attended a 3-para, aged 36, who earned a precarious living by a sort of minor exhibition —penny-in-the-slot machines for the most part, but also a fat woman and a two-headed calf. This patient caused a lot of trouble, for she was for ever giving false alarms of labour. However, one night it really seemed to be the genuine thing, and in due course the os dilated fully, but the head did not descend properly into the pelvis. There was no deformity or obstruction that could be ascertained, but I decided that the time had come for delivery. The membranes were ruptured. No skilled assistance was available, only a "friend"; the blades of the forceps kept slipping off, the head receded and in the end an arm came down. So I deepened the anæsthesia and proceeded to turn. At this point the "friend" fled and I was left entirely single-handed, continuing to give an eye to the anæsthetic with one hand in the uterus. Luckily, turning is easy, shortly after rupture of the membranes, and mother and child both did well. Unluckily, although my modest bill for £2 2s. was sent in promptly, she paid £1 1s. and then fled, with her (Samarian) husband and child, exhibition, fat woman and two-headed calf, to an unknown address.

Anæsthetization by the operator should be a risky procedure, but it is surprising how seldom any serious difficulty arose. On one occasion only I recollect giving an overdose of chloroform, but no harm resulted.

(4) An Atypical Fibroid Polyp.

One morning in 1912 I entered the operating theatre of a cottage hospital and found a rival practitioner with his partner acting as anæsthetist and a female patient in the lithotomy position. There was the usual mess associated with gynæcological procedures, and the operator was fishing in the uterus with a pair of forceps. "Come here, Ward," said he, "and tell me how to extract this pedunculated fibroid. I keep on catching it in the forceps, but they slip off every time." I suggested that the next time he should twist only and not pull. The twisting business took a little time and there then appeared—*the head of a six months' fœtus*. The operator seemed somewhat overcome; he informed me later that a history of hæmorrhage from an enlarged irregular uterus had made him diagnose fibroids, and the condition seemed urgent enough to call for operation.

Sometimes a pregnant uterus about the fifth month is curiously lumpy in shape, and I have made a similar mistake myself for a few days, till Nature kindly corrected me by delivering the fibroid.

(5) Catheterization.

Once upon a time I was taught—but never shown—how to pass a female catheter without exposing the patient. I trust this art is taught no longer. Even with exposure it is not always easy to pass a catheter. Sometimes after labour, when there may have been awkward little anterior tears and there is irregular puckering and œdema, the procedure becomes really difficult.

On one occasion I tried by all sorts of methods for over half an hour and failed. I then went back to the surgery and called on my partner's locum, a young man who came down between hospital appointments and was quite one of the best in every way. I explained matters and took him in my car to the house. Arrived there, I

asked him to wait a moment while I made one more attempt. This time I succeeded, so I took the locum home to tea instead.

The other day, wandering through the narrow streets of a South Devon seaport, thinking mainly about tuberculosis, I caught sight of a "London" man who was a contemporary of mine and well known to possess not only considerable ability, but also that rarer asset, a conscience. His eyes were on the ground; he cycled slowly, and, as it appeared, sadly, so I pulled him off, and he explained that for nearly an hour he had tried to catheterize a good-class patient in the puerperium. At the end of that time the nurse was "snorting," so he asked her to try, and she also failed. "And then," I said, "you are going to say that Nature demonstrated the proper channel?" "Not as bad as that," he replied, "but hot applications and so forth succeeded where we had failed." I told him my story and cheered him up sufficiently to give me lunch.

Of course genuine difficulties like this are exceptional and usually arise through a contempt for them or ignorance of their possibility. If the anatomical landmarks are carefully noted it should be possible to overcome any difficulty.

(6) The Concealed Rodent.

During one summer holiday a locum came one day to ask me to see an abortion case about which he was much puzzled. He said that every time he attempted to enter the uterus something bit his finger and he could not proceed. He seemed serious and showed a mark on his finger caused by the bite. I went to see the patient and had much the same experience; as the examining finger entered the uterus it was pricked sharply on one side. The patient was a multipara and there was nothing significant in the history. I suspected that something used to procure abortion had been broken and left behind. Careful examination enabled me to remove the cause—half a curved needle which had snapped and

remained *in situ* when a previous medical attendant had stitched a torn os uteri after labour. Apparently the operation had been done immediately after parturition, as the patient did not remember it.

(7) Head Presenting through the Anus.

This picturesque, but alarming, diagnosis once made by a colleague, proved to be a case of abortion in a patient with an unreduced, retroverted, gravid uterus. The patient strained with the labour pains and forced the retroverted uterus still lower, until it bulged and appeared at the anus, carrying before it the anterior rectal wall.

(8) Puerperal Sepsis.

The notifications represent only a small part of the incidence of this prevalent disease. So much blame is laid on practitioners who have cases of puerperal sepsis that they frequently conceal or fail to notify it, even fatal cases are signed up as thrombosis. I had quite a goodly experience at the "London," where I was first resident in charge of the newly opened ward for puerperal sepsis, and later in practice. Most interesting cases they were, but our staff did not take great interest in them in those days, so the sister and I had a very free hand. The sister was most keen and helpful, and we tried various remedies: antistreptococcal serum, vaccines, urotropine and different kinds of local treatment. Both in hospital and in private the only remedy that I could trust was the intra-uterine douche, and, of course, some patients were not benefited even by this. In my practice I always persevered with antiseptic intra-uterine douches—sometimes twice a day—using an American glove stretcher nozzle which allowed a very free return. I always took care to disturb the uterus as little as possible. Occasionally, the method appeared to succeed even when septic thrombosis of the uterine veins threatened. Possibly, retained antiseptic found its way into the veins,

or Nature was able to deal with the venous condition, when some of the organisms had been removed.

The idea still seems to prevail that puerperal sepsis is always introduced by vaginal examination. This may very often be true, yet in nearly half of my cases no vaginal examination had been made. It seems probable that micro-organisms are present in the normal puerperal vagina. If they happen to be virulent and the resistance low puerperal sepsis occurs. I have seen a nurse give a to-and-fro vaginal douche in the puerperium using a bedpan or the chamber as holder and receptacle for the water. Providentially no ill-effects followed.

Some schools deprecate all vaginal examination, even before labour. Admittedly there may be considerable risk after labour, but beforehand it must be negligible if reasonable precautions are taken. The value of these examinations is: (1) They give the practitioner much more confidence; and (2) they give him experience, of which no one can have too much. The diagnosis of a presentation by abdominal examination is never quite certain. From time to time I used to get very confident of my ability in this direction, and then would come a fall.

(9) Ergot before the Third Stage of Labour.

Once, when doing district work as a student, I attended a case near the Hospital, and, after waiting a long time for the placenta, sent for the R.A. He advised me to give a dose of ergot and to send again if labour was not completed in three-quarters of an hour or so. The placenta did not appear, and so I sent again. Ultimately it was removed, but with the greatest difficulty, because an hour-glass contraction of the uterus had occurred, making it almost inaccessible.

Some years later I was called in consultation some eight miles out in the country, to a six months' premature birth, in which the placenta was retained, as the doctor said, "in spite of a dose of ergot." Exactly the same

difficulty had to be overcome, and the performance took me more than half an hour of very strenuous work. After my rather violent efforts, the woman had an immediate temperature of over 101° F., which disturbed me just a little, but in three days it was normal again and recovery was uneventful. I do not know who first advised ergot in these circumstances, but the advice reappeared some years ago in the *British Medical Journal*, and I am sure it is bad.

(10) Forceps Delivery.

Nowadays it is probable that all students use forceps under supervision before they are qualified, but it was not so in my day, and I first applied forceps in private practice on my own account. It was certainly agreeable to find the application so easy, but it took me some time to discover that bringing the handles forwards towards the abdomen was often much more effective, as well as less dangerous and exhausting, than any amount of straight pulling. I am not, of course, referring to high forceps deliveries, but to the everyday case with the head down in the pelvis. I was taught always to wait for a pain before pulling, but I found that often the best way to start a pain is to start pulling.

I always boiled my instruments before and after use, although warned by partners that this would lose patients. On one occasion I did lose a patient, because they resented my using the family kettle to boil the forceps, whereas their previous attendant merely laid them on the bed; generally speaking, however, I gained more than I lost by this attempt at cleanliness, especially when I accompanied it by a little patter.

(11) Perforation.

On the whole, perforation is too frequent in private practice. I have known it done, quite unjustifiably to my mind, for an œdematous vulva. But a deformed

pelvis or a face presentation with the chin fixed posteriorly may render the step necessary.

It is a mistake to think that the usual perforation instruments are essential. To my knowledge the operation has been successfully performed with a pair of dressing scissors. After evacuating the cerebral contents the operator's hand was used to compress the fœtal skull, and extraction proved easy.

(12) Diachylon as an Abortifacient.

For two successive years I did a locum in a suburb of Sheffield, a place with streets of small houses occupied by clerks and their wives. I there attended two or three miscarriages which were obviously due to lead poisoning; indeed, tactful questioning elicited that pills had been taken "to bring on the periods." These patients did not seem to suffer as much as they are supposed to. An examination of the gums of all young married women coming to the surgery revealed so many blue lines that the use of diachylon in that district seemed to be almost universal, and made me think it must be a fairly safe abortifacient. I remember one case, however, when a practitioner in the district, giving evidence on a woman who had died during a miscarriage, confessed, with exceptional honesty, that there had been very little hæmorrhage, and that he was not satisfied as to the cause of death. The coroner, a layman, asked, "Did you look at her gums?" The practitioner had to return to the body for this purpose, and found, somewhat to his humiliation, an obvious blue line.

(13) Occipito-Posterior Presentations.

I attended a number of unreduced occipito-posterior presentations. In one town where I practised we were frequently called to cases when midwives were in difficulties, and this was a common difficulty. Once I had four occipito-posterior cases in succession, and began to

think the frequency was under-estimated; one of these was in a gipsy's caravan, a rather close and stuffy atmosphere. Occasionally, but by no means always, I was able to reduce them.

A point worth noting is that, if ordinary forceps are applied in the occipito-posterior position, they may *actually prevent* a normal reduction to the anterior position. This is not so with axis traction forceps, so the tyro should certainly buy, and use, axis traction forceps.

(14) Post-Partum Hæmorrhage.

Fortunately I never had a death from this cause, but it is an ever-present bugbear, especially in chloroform and forceps cases. I have known it happen to a practitioner who was thus tragically interrupted when he had finished his attendance and was congratulating the father downstairs. This type is called "reactionary hæmorrhage," and as someone has said, "luckily for us doctors it is uncommon." He was a dangerous man who first advised putting a fist into the uterus for post-partum hæmorrhage. I remember one practitioner who, in a state of agitation, passed a large unwashed fist into a uterus and held it there for twenty minutes or more. The patient did not die of hæmorrhage, but did die of puerperal sepsis ten days later. No self-respecting uterus would retract with a large septic fist inside it.

(15) Ruptured Perineum.

This is a more important accident than is usually believed. Women with badly-torn and improperly-repaired perineums are never the same again, and are all too common in private practice. They complain of all sorts of pains and discomforts and wander about from one doctor to another, usually labelled "neurotic."

Probably the best time to repair the ordinary incomplete rupture is while waiting for the placenta, but I

make no claim to be an expert in these matters, and the doctor should make sure there is not a second child before inserting the stitches.

As a student, I once attended a B.B.A. and found a ruptured perineum. It was 6 o'clock, and I guessed the R.A. would not appear till after his breakfast, so I went back to hospital and told him about it, but he would neither go to suture the tear nor allow me to try, and advised me instead to tie her legs together. This I did, and carefully supervised the after-treatment. There was some sort of healing, but I have always felt rather uncomfortable about the case. In those days I was young and modest, or I would have dragged the R.A. thither willy nilly.

The first complete rupture of the perineum I saw was in a primipara with an unreduced occipito-posterior presentation. It was my partner's case, and I had not met the woman before. After prolonged waiting I decided to use forceps, but could not deliver, although I pulled until unable to continue. My partner, who arrived one and a half hours later, declared for perforation. I voted for another pull, which was successful, but caused a complete rupture of the perineum. I stitched it and, after a trifling leak for a few days, all went well. Afterwards the midwife made various statements about my conduct of the case, and being still young, but pugnacious by this time, rather than modest, I mobilized the Medical Defence Union against her. Various affidavits had to be sworn. The patient's husband was only too willing to help me, for the midwife, who happened to be the local minister's mother-in-law, had also suggested to the deacons of the chapel that the child, weighing over nine pounds, was suspiciously large for seven months—the patient had only been married seven months—and it became a question whether this unlucky couple should be expelled from the chapel. The midwife denied, through her solicitor, that she had made any statements. I was advised to accept her denial, and the matter ended.

For my second complete rupture no skilled assistance could be obtained, so I had to give the anæsthetic, and do the repairs single-handed, which was a very trying and exhausting business, as the patient would come round and kick me on the head or upset my bowl of swabs, at a critical moment. Fortunately, the wound healed all right.

(16) Accouchement Forcé.

By this is meant an early application of forceps and rapid delivery. Under this heading come my own most numerous and worst sins. I applied forceps too early and delivered too rapidly. There are excuses. The practitioner visits a patient several times perhaps, and at each visit is pressed to give assistance. It is a busy day (as are most days), and he hardly knows how to get everything done; or else it is during the night after a busy day. So he yields to temptation, dilates the os, applies forceps and delivers. All may go well; the patient and her relatives may be pleased, but only too often an extensive tear of the os uteri, possibly also of the perineum, results, and there may be permanent damage to the patient.

One of the last confinements I attended in private practice was my worst. A primipara had been in labour for many hours, and seemed likely to continue for many more. I saw her before going to bed, and thought to continue next day. Before 1 o'clock I was called out and pressed for assistance, and again about 2.30, and finally just about 4. I was tired and not very fit at the time, so completed the dilatation of the os and delivered; but it was a difficult and prolonged delivery; the os was badly torn and so to a lesser extent was the perineum. Pyrexia and parametritis followed. Luckily the child lived and the patient recovered, but only after an illness of many months' duration which certainly should never have occurred.

(17) Revivalist Obstetrics.

At a physiological interval after the excitement of a revival meeting, such as we had from time to time where I practised, a crop of illegitimate births would occur. One girl, in an ordinary way modest and retiring, had two illegitimate children, each dating from a revival meeting. She was, indeed, some relation of the preacher. I visited the place again during the war, and there she was beating all records in the production of 6 in. shells, working with set face and with a speed and determination which commanded universal admiration and respect. I leave moralists and sociologists to make their own comments. Certainly the same fervid impulse was responsible both for this girl's virtues and for her vices.

(18) An Obstetric Honour.

To have the baby named after him is an honour to the obstetrician. When I was house physician at the London a female patient was admitted suffering from pneumonia and far advanced in pregnancy. Her name was Rabbinowsky (at least it sounded like that and the spelling was not criticized). She was so ill that a post-mortem Cæsarean section was discussed with the relatives, somewhat to their perturbation. The patient passed her crisis satisfactorily, but convalescence was tardy and the induction of labour was considered. To arrive at a decision, it was important to know if the fœtus was still alive. Although the stethoscope was one of my strong points, I could not hear the fœtal heart, nor could movements be felt, so I decided that the child was dead, and informed the mother. I consulted my chief, who explained that he had done a good deal of work and had indeed written an M.B. thesis on the subject of fœtal death. He told me there were eight sure signs, all of which were present in my patient:—

(1) The uterus was round rather than egg-shaped.

(2) No heart sounds were heard.

(3) No movements were detected.
(4) Movements could not be induced by prodding or otherwise stimulating the fœtus.
(5) The fœtal body had sunk and had lost all tone.
(6) When compressed longitudinally, between buttocks and head, the fœtus did not rebound but remained compressed.
(7) The breasts had retrogressed.
(8) My memory fails me. Perhaps it was that the mother believed it to be dead.

So my chief also informed the woman that her child was dead and we went our ways. Within a week the patient was delivered of a living, fairly healthy, male child.

A week later she told me the child had been christened "Ernest Henry" Rabbinowsky "after the thin doctor, and the big doctor who both said it was dead." With mixed feelings and a moderately steady voice I thanked her, but there passed through my mind a quotation :—

> "There are four and twenty ways
> Of constructing tribal lays,
> And every single one of them is right."

and adapted it to the occasion.

Ernest Henry, alas, was admitted within two years suffering from acute broncho-pneumonia, and died.

(19) A Pituitrin Tragedy.

An experienced and reliable accoucheur of my acquaintance frequently spoke of the time he saved by administering pituitrin during labour. After some years he expressed his belief that the method was entirely free from danger and should be more generally employed. One day he gave the usual dose to a multipara in labour ; an hour later she collapsed, the fœtal head receded and the mother died, apparently from a ruptured uterus. He informed me that there was no pelvic obstruction and no

contra-indication to the use of the drug that he could discover.

The varied work of a general practitioner often fails to provide sufficient experience for him to form a well-balanced judgment of the value of some special drug or line of treatment.

(20) Cardiac Massage in Asphyxia Neonatorum.

Cardiac massage is sometimes of considerable value as an aid to artificial respiration in asphyxia neonatorum. The method is especially useful in white asphyxia, in which there is probably cardiac as well as respiratory failure. It does not obviate the necessity of artificial respiration by the usual and only really efficacious method—traction on the arms, but it often renders this successful where it would otherwise fail.

If smacking and clearing the pharynx does not make the child breathe, artificial respiration is resorted to for a minute or so. If this fails, the child's body is placed flexed and supine. The head and shoulders rest against the upper portion of the operator's forearm, and his left hand grasps the infant's left thigh. The fingers of the right hand are now pressed into the upper part of the flaccid abdominal wall beneath the diaphragm, and the right thumb is placed over the cardiac area externally. Massage can now be performed much more effectively than in an adult with the abdomen opened, and is sometimes strikingly successful. Now and again the operator pauses for a moment to resume artificial respiration, reverting to massage if necessary.

Asphyxia neonatorum should be regarded as a surgical emergency exactly similar to cessation of respiration on the operating table, and should be dealt with on similar lines. The many methods of resuscitation described in textbooks may be of historical interest, but only confuse the student. If smacking, artificial respiration by traction on the arms, and cardiac massage will not restore the infant, it is most improbable that any other method will succeed.

CHAPTER IV

POST MORTEM ADVENTURES

THIS is no attempt to compete with the Rev. Vale Owen, the special next world correspondent of the *Weekly Dispatch*. It is only a record of some autopsies, performed mainly in private practice, and of events connected with them. Post mortems in private practice are of course conducted under very different conditions from those of the well lighted and ventilated pathological department, where all the subjects are, moreover, in excellent condition. To obtain consent for an autopsy in private, and then to perform it, requires the suavity, pertinacity, and thick hide of an insurance agent, the capacity for strenuous work of a coal miner, and the principles of a professional diplomat. But whatever the cost, they do so much to maintain a scientific interest in the daily routine that they are well worth while.

It is a great regret to me that lack of pathological knowledge has made my observations crude and incomplete. No doubt a multitude of interesting things have been missed, for every post mortem revealed appearances I did not understand, and every visit to the Andrew Clark Department makes me more conscious of ignorance in regard to simple matters. Nevertheless, the hunt for truth gives a life long interest in one's work more valuable than any legacy.

As an example of the right sort of enthusiasm let me quote an incident in the life of the late Sir Jonathan Hutchinson. A friend of mine in country practice near Winchester once sent in consultation to Sir Jonathan a patient with a black growth on the prepuce. Sir Jonathan called it a "melanoma" and recommended circumcision, asking the doctor to be kind enough to send him the specimen. Circumcision was performed, and the

specimen was put in a bottle and forgotten. Six months later my friend was closing his morning surgery when he found blocking the doorway a tall, unprofessional-looking individual with a prominent nose. "Come in," he said, "and may I ask your name?" "I am Jonathan Hutchinson," was the reply, "and I've come for that prepuce." He got it.

The morning is the best time for special investigations. The day's routine can then be compressed correspondingly. If the day's routine is complete first, you may not feel equal to special investigations afterwards.

(1) Cerebral Mumps.

Late in 1910 I attended a boy for mumps. The attack began on November 20. He was more ill than might have been expected at the time, but was well again in six days and had been up and about for two days when I was sent for because he had had a fit. He was unconscious and had just vomited. Temperature 101·3° F., pulse-rate 90.

For two or three days he remained semi-conscious, complaining of headache, vomiting frequently, and refusing all food. There was slight head retraction and Kernig's sign was positive. If I had not known that he had just had mumps I should probably have diagnosed *tuberculous meningitis*, but he recovered in a few days.

In October, 1911, he was brought to me with marked double optic neuritis, and symptoms of cerebral tumour. I did a decompression operation and subsequently made a wax cast and fitted a celluloid protector for his hernia cerebri. There was relief to his headaches and a temporary improvement of vision, but, unfortunately, double optic atrophy supervened.

Within a few months he died suddenly. I could not state the cause of death, so the coroner ordered an inquest, and also an autopsy *on condition that he did not pay me for making it.* He knew me by that time.

The post-mortem was performed on a wintry afternoon, by the light of a single candle, in the kitchen of a four-room slum dwelling, while the rest of the family huddled in the other downstairs room. The suspected cerebral tumour was not present, but there was internal hydrocephalus (which may simulate a cerebral tumour) secondary to old inflammation at the base of the brain, and this presumably had blocked the foramina of the fourth ventricle. At first sight the distended third ventricle, viewed from the base of the brain, looked like a hydatid cyst, and the optic tracts and chiasma stretched like a band across the dilated ventricle. There were adhesions at the base and the Sylvian fissures were matted, but the upper surface of the cerebrum was normal, except for thinning and flattening due to the hydrocephalus. There was no sign of tuberculosis.

The case is interesting because :—

(*a*) It is one of the few recorded autopsies on "cerebral mumps," and shows that, however transient the symptoms, they are due to genuine meningitis and not meningism. Probably meningism generally means meningitis, though often serous and not purulent meningitis.

(*b*) The simulation of cerebral tumour by the hydrocephalus was then new to me, although it is mentioned in "Allbutt's System" and no doubt elsewhere.

(*c*) Possibly the boy would have been saved had I tapped the lateral ventricle instead of merely decompressing.

(2) Acute Pancreatitis.

One July 27 I received an urgent message to attend at a cottage some three miles distant. The patient, a very stout woman of 58, quite blind, the wife of a retired publican, had been attacked suddenly with abdominal pain on the preceding day. She had been vomiting frequently, and complaining of severe burning pain in

the abdomen since the onset. I found her lying in the middle of a feather bed, looking very ill and making no attempt to reply to questions, but rubbing her epigastrium continuously with the right hand and repeating, "Llosgi! llosgi! llosgi!"[1] I was dependent for a diagnosis on the relatives' story and the physical examination.

The tongue was furred, dry and brown, the pulse-rate over 100 and its volume small; the abdomen was rigid all over, especially in the epigastrium, and nothing else could be felt. The liver dullness was normal, and there was no sign of free fluid in the abdomen. Both eyes had cataracts.

The diagnosis appeared to lie between intestinal obstruction, possibly due to fæcal impaction; acute pancreatitis; and abdominal arteriosclerosis. I favoured pancreatitis, mainly because of the patient's stoutness, although the symptoms and physical signs were compatible with any acute surgical condition in the upper abdomen. Operation was out of the question, as it was hopeless to try to obtain the necessary consent. Moreover a laparotomy in a patient so severely ill would be a grave undertaking, even in the best surroundings. I ordered chlorodyne and sodium bicarbonate every two hours and departed.

Next day the patient was manifestly worse, the pulse was more rapid and thready; the vomiting continued and the vomited material was definitely fæculent. There seemed nothing left to do but to give a copious enema, as the patient must certainly die if untreated. Ten minutes' eloquence sufficed to obtain permission, and I gave a very large enema very slowly, taking more than half an hour for the administration. The quantity of fluid seemed greater than the amount which experienced nurses have told me is the maximum possible, and before the end I began to fear that some accident had happened, and to remember with misgiving Dr. Bulloch's

[1] Burning.

well-known story of the horse. The result was very satisfactory, and arrangements were made for a repetition of smaller enemata at suitable intervals. Next day the vomiting was infrequent and the day after it ceased altogether. The patient was up in about ten days and made a good recovery.

The sequel came with startling suddenness. On October 18, at 2 a.m., I was called urgently and found the patient dead. Like so many blind people she was none too clean in her habits, and the upper chest and root of the neck was grey with vermin (three varieties) seeking to escape as the body cooled. I was unable to assign a cause for the death, so an inquest and post-mortem were ordered. It was performed a few days later, with the help of a police sergeant. There was a dense mass of adhesions in the upper abdomen anteriorly round the pancreas, but no adhesions below. It seemed that acute pancreatitis had indeed occurred previously, and adhesions to the anterior abdominal wall, among other places, prevented the stomach from expanding downwards, and so had caused fatal embarrassment to a heart already handicapped by fatty infiltration. The stomach was full of large portions of undigested food. It was warm autumn weather and the subject was already black and distended. The major organisms still in the clothing were also troublesome, and indeed frightened away the sergeant for a time. However, he grew ashamed, and, returning, asked if he could saw off the top of the skull, informing me that he had been an asylum attendant and was accustomed to do this. I agreed, but begged him to be careful, as the subject was in a dangerous condition. Glancing up, I saw him holding the top of the skull with his left hand, while sawing with the right. I again warned him that if he wounded himself he might not recover, and continued my work. A squeak from the head-end disturbed me—the sergeant had sawn his thumb. I was really frightened about this, and started by cauterizing the wound with lysol; then I washed it in perchloride solution, and

finally applied a boracic fomentation, and gave him five shillings. The wound healed kindly, and the last I saw of the sergeant was in the illustrated papers, giving evidence at a recent famous murder trial.

It is difficult to say what influence the remedies used had on the course of the disease—perhaps none—but a case that would probably have been operated on in hospital recovered well at home. The mortality of operations on acute pancreatitis is very high, and it seems doubtful therefore if this is the best line to follow. When cases diagnosed as acute pancreatitis recover, the diagnosis is often doubted and it cannot be confirmed without operation or autopsy. This case was at least a complete one. The administration of alkalies and an opiate were necessary as a temporary measure. The large enema may have been unnecessary, but I should certainly try the same treatment again in similar circumstances. Minor points of interest are: (1) the large pieces of food which are ingested by a hungry, edentulous person, and which are presumably digested as a rule without excessive discomfort. The woman had eaten a heavy supper of mutton broth containing vegetables, a meal of which she was very fond and of which she had partaken on several previous occasions. (2) A very large enema can sometimes be given if it is administered very slowly and with adequate encouragement to the patient. During a busy day a nurse has not the time to devote half an hour to a single enema, and so wastes no time over the injection. In certain cases therefore, it should be given by the medical attendant. (3) The fatal embarrassment of a fatty heart by a distended stomach is uncommon in hospital, but is probably the immediate cause of death in a number of patients on whom no autopsy is performed. It is a matter for conjecture whether it was from this that Henry II died after his "surfeit of lampreys." The cause may have been perforated duodenal ulcer, but the distended stomach seems at least as likely.

(3) Sudden Death in Pregnancy.

One evening at 11.15 I was called to a woman aged 28, far advanced in her first pregnancy, and found her on the kitchen floor—dead. She had come home after visiting a friend near at hand, had had supper, and had fallen dead while sorting her husband's washing. The collars ready to take upstairs lay on the table beside her. There was no history of any illness either before or during pregnancy.

An interesting feature of this autopsy, which was performed on a summer's day in a small drawing-room with the windows shut and the blinds drawn, was that the woman's father, an undertaker, asked if he could assist. His reason for asking was that she was his son-in-law's second wife within a few years, although the man was still under 30. I made no objection, and indeed he was most useful. He did all the stitching with the greatest equanimity, though he had never before seen an autopsy. I put on an apron, placed the body on the floor and worked rapidly, perspiration all the while dripping steadily on to the subject and the floor, which made my assistant exclaim, " I never knew that doctors worked so hard ! "

I could find nothing the matter. There was a normal pregnancy, nearly at term, and a somewhat distended stomach. The heart muscle and coronary vessels seemed normal, as were the liver, kidneys, and other organs. My only suggestion was that pregnancy and a distended stomach had fatally embarrassed the heart, but I felt very dissatisfied. Some pregnant women are subject to faints and others are short of breath, but I have never seen life threatened from these causes if the patient was normal in other respects. The cardiologists tell us of ventricular fibrillation in Graves' disease ; may not this occur in pregnancy sometimes ?

(4) Heart Failure.

A young domestic servant, aged 20, was found dead in August, 1907. A year previously she had taken a bottle of medicine for "anæmia," but that was the only history of antecedent illness. I was asked to be present at the autopsy; two local practitioners officiated. An incision was made from the episternal notch to just below the xiphisternum. The breast-bone was removed and the organs so revealed seemed normal. One doctor looked grave and said to his colleague, "Heart failure in my opinion." "I agree," said the other, "obviously heart failure."

The examination thus concluded, we adjourned to the inquest. One of the officiating doctors was sworn in and the coroner asked, "Well, doctor, what did you find?" "All the organs were healthy in every respect," said he, "with the exception of the heart." "And the heart?" asked the coroner, in a slightly basser voice. "The right side of the heart," said the witness, "*was tensely distended with black blood*" (sensation among the jury) —"some of it clotted." (Further sensation.) "And the cause of death then, doctor?" "Was undoubtedly failure of the heart, due to weakness." The verdict of the jury was in accordance with the medical evidence and everyone was satisfied. I had always thought that verdicts in such cases were worthless, but had never before realized how worthless.

Now for the sequel. I went and did that post-mortem again myself, carefully examining everything, and could find nothing abnormal. I may no doubt have missed something, but with the best care available nothing could be found; no large thymus or thyroid, no tuberculosis of suprarenals—nothing.

Servant girls, at this age, do sometimes die suddenly, and the verdict is invariably as above, and sometimes the doctor says the heart is thin, that is all. A faint is usually a trifling event, and those who have studied them say they are accompanied by a slow pulse and low blood-

pressure, and the cause is usually nervousness or anæmia. It is not inconceivable, however, that a faint here and there, whether due to emotional shock or other cause, may prove fatal. In my own mind that was the explanation here, but it was not proven.

(5) Hyperacute Lymphæmia.

At 6 o'clock on a Sunday evening, a labourer, aged 34, came to see me, complaining of a severe cold and sore throat. He had been at work the previous day as usual, but had felt unwell for the last two days. He remembered no previous illness, and the family history was unimportant. The patient was of average height and robust build, but looked pale and ill. The pharynx was congested and the cervical glands on both sides below the angles of the jaw were somewhat enlarged. The temperature was 100·5° F., the pulse-rate 108. It seemed likely that he was suffering from one of the diseases of the influenza group; he was treated symptomatically and told to lie up at home and report next day. On Tuesday I was sent for and saw the man at about 7 p.m. He was seated in front of the kitchen fire and rose to meet me as I entered, but he looked very ill and walked unsteadily. He complained that the throat was worse, and that he had also a severe headache and pain in the back. The temperature was 102·5° F., the pulse-rate 120, the pulse rather thready. There was now more marked enlargement of the cervical glands and further examination revealed enlargement of the glands in axillæ and groins; the enlarged glands were discrete and soft. There were a few fine crepitations scattered over both lungs. The abdomen was not examined that day. He was ordered strictly to bed, and nursing arrangements were made. On Wednesday afternoon his condition was desperate. There was frequent slight hæmoptysis and blood had also been passed by the bowel. He was very restless and delirious, and there was a mottled purpuric

eruption over the thorax and abdomen in front and behind. There were submucous hæmorrhages in the mouth and subconjunctival hæmorrhages. The spleen was enlarged one hand's breadth below the costal margin, the liver margin reached the umbilicus, the kidneys were not palpable. The possibilities of plague and typhus fever passed through my mind.

Early next morning he died and an autopsy was performed the same afternoon, under adverse conditions and without consent. There were no relatives in the town and I feared some hitch if I did not act promptly. An amateur nurse assisted, impelled by a commendable curiosity. A few blood films were taken from a vein in the thoracic wall, and pieces of liver and an axillary lymphatic gland were taken for microscopy. There were hæmorrhages everywhere ; subperitoneal, subpericardial, subendocardial, subpleural and into the lung. There were submucous hæmorrhages in the bronchi, and the stomach was full of altered blood. The kidneys were large and firm, the pattern ill-defined. The blood-films showed the condition then called *acute lymphatic leukæmia*—myelocytes and many large lymphocytes. The pathologist's report on the tissues read : " The capillaries throughout the liver section are dilated and crowded with large lymphocytes and myelocytes, the liver cells being merely compressed by the dilated vessels. The glands show marked changes in structure, lymphoid nodules having disappeared and their tissues being composed of large lymphocytes and myelocytes in a delicate stroma. There is no evidence of inflammation of the glands."

This then, was a case of lymphatic leukæmia, with a duration of six days from the onset of symptoms. As Myers, in " Allbutt's System of Medicine," describes as acute lymphæmia those cases in which death occurs within five to six weeks from the first occurrence of symptoms, hyperacute seems the correct adjective here. Probably the true explanation is that death was due to an acute infection of some kind, supervening on a previ-

ously symptomless leukæmia. These patients are said often to die of septicæmia or some other acute infection. So much for the scientific aspect of the case. Four days after the autopsy I was seated at evening surgery when in came, unannounced, three truculent-looking north countrymen. "We are the relatives of A. B.," said one of them, "and we want to know why he died and why you did a post-mortem without our consent?" Now it was that I felt so thankful for experience gained in wangling consents in hospital out of similar truculent individuals. "Are you the relatives of A. B., who died on Thursday?" "Yes!" "Won't you sit down?"—and the worst was over. In finding chairs and settling themselves comfortably, their set speeches were forgotten, while I, for my part, had time to think out a plan of action. My lightning diagnosis was "Cherchez la Bradbury," and on this I acted, conversing with them somewhat as follows: Were they really relatives of the man?—for he had told me he had none. Well, very likely they were right, he may have been too ill to remember. A most important question to settle had been whether injury or some noxious fumes at his work had been connected with the illness, and this could only have been settled by autopsy. On the other hand, the possibility of a serious infectious disease made it essential to do the post-mortem forthwith, as the M.O.H. might possibly order the burial at once. Unluckily, there had been no known relatives to consult and the man, during life, had expressed regret that no one was interested in him. The enemy retreated and the matter ended.

(6) Leukæmic Typhoid.

A man, aged 43, was in hospital from July until his death on October 5 of the same year, under treatment for splenomedullary leukæmia. He was treated with X-rays and various drugs; he had a slight irregular pyrexia with exacerbations, and there were occasional attacks of diarrhœa.

At the autopsy the pathologist, a well-known authority on toxicology, startled us all by reporting that the patient died of typhoid fever :—

"The last two feet of small intestine contain ulcers which appear typical of typhoid. They pick out Peyer's patches and there is no peritonitis over them, no sign of tubercle. Lymphoid nodules are also picked out elsewhere. In part, the sloughs are adherent and in parts already separated." Those are the very words as dictated to a reliable post-mortem clerk. Typhoid bacilli were not found in the bile. I notified the case and signed the death certificate "typhoid," but felt dissatisfied and wondered why a disease of the lymph tissues should not cause ulceration unaided, or, may be, render lymph follicles more prone to be attacked by local organisms? I am now convinced that the case was not typhoid, but leukæmic ulceration, and a Cardiff pathologist told me, when reading a paper before the South Wales Branch of B.M.A., that he was familiar with the condition. Possibly the action of X-rays was an accessory factor.

This is merely another illustration of a medical truth which is, perhaps, insufficiently recognized. *Similar pathological changes may be due to different causes.* This is best illustrated in skin diseases, the study of which so often provides the key to medical problems. Erythema nodosum, for instance, may be due to many different toxæmias and a similar "eczema" may have a local or general cause (e.g., a vaso-motor neurosis in babies); and a rash exactly similar to scarlet fever may occur from sepsis after burns or surgical operations. Osteo and rheumatoid arthritis, also, may be due to different causes, and the same applies to diseases of the lungs, heart and kidneys.

(7) Congenital Cystic Disease of Liver, Kidneys and Spleen.

At least, that was my diagnosis when house physician. Tall? Yes, but I had seen examples, and had them in mind.

A boy of 16 was admitted to hospital on October 1. He had been ill for three weeks, tired, unable to work properly and wasting; he had been liable for three months to attacks of vomiting, which had become almost continuous in the preceding week. Increased frequency of micturition: $\frac{d}{n}$ — $\frac{6}{2\text{-}3}$. Breath short on exertion. The family history was not significant.

On examination, the boy was found to be thin and delicate, with a malar flush. There were a few slightly raised purplish spots, $\frac{1}{4}$ in. to $\frac{3}{4}$ in. in diameter, on the right side of the chest and abdomen. The lungs were clear, but a systolic murmur was audible at the apex and over the pulmonary area. The liver was enlarged to the umbilicus; its edge was firm, regular and not tender. The spleen was enlarged to three-fingers' breadth below the costal margin, and both kidneys were much enlarged. Both fundi showed slight arterial thickening. While in hospital there was diarrhœa, with blood and mucus in the stools. Several colleagues saw him, but no one offered an alternative diagnosis, although mine was accepted with some reserve. Then one day I stained a blood-film and found some large lymphocytes. Lymphæmia was diagnosed, but it was uncertain if this accounted for everything, and whether there was not also congenital cystic disease. On October 26 the abdomen became swollen, and peritonitis or intestinal obstruction was suspected. On October 27 he was transferred to the surgeon and a laparotomy was performed. His condition did not allow a prolonged exploration, but his kidneys were viewed and palpated, and the diagnosis of cystic disease was confirmed. He died a few days later, and the post-mortem revealed acute lymphatic leukæmia, and nothing else. The kidneys weighed 2 lb. 9 oz.; multiple hæmorrhages were present in their substance, and under the capsule were large rounded hæmorrhages which at operation had given the feel and appearance of congenital cystic disease.

This case illustrates the danger of getting set on a diagnosis, and also shows how an enthusiast may carry others with him into error. Had there been no autopsy the case would have been handed down as a tall but triumphant diagnosis, confirmed by laparotomy; even the surgeon erred. The only consolation is that if there had been no enthusiasm no lesson would have been learnt.

By way of indirect condonation for this error, I may say that a pathologist recently showed me a stomach containing a hair ball of record size, removed from a lady of middle age, who had been treated in private by a distinguished physician as a case of splenic leukæmia for eleven years, during the whole of which time the blood was never examined. A second consultant found the blood normal, suspected a hair ball and handed her over to a surgeon of local repute, who performed a laparotomy and reported no hair ball, but an enlarged spleen. He removed the appendix and closed the abdomen. It is improbable that an account of this case will be published, but I must here quote Hazlitt :—

"The yarn of which we are made is mixed of good and evil. Our virtues would be proud were they not whipped by our vices, and our vices would be in despair were they not encouraged by our virtues."

(8) Overlying.

On a few occasions I performed autopsies on infants found dead in bed by their parents. Asphyxia seemed to be the cause of death but in some cases, perhaps, shock played a part. They were generally weakly infants; a strong child would probably protest too vigorously to allow itself to be long overlaid. The jury usually returned a verdict in accordance with my evidence, but I can remember one rebuff. I had said, "death from overlying," but the country jury said the child died in a fit and returned that verdict. The coroner afterwards told me that juries sometimes

returned queer verdicts in spite of him. The queerest he remembered was: "The deceased died from a stone in the bladder, swallowed while lying on a gravel path in a state of intoxication."

Truly truth is stranger than fiction.

(9) A Juror's Trap.

A working man, aged 55, was picked up dead on a scaffold; it was thought he had fallen to where he was found. No history of any previous illness could be ascertained, and the man had worked regularly until his death. There was no sign of injury, but a large hæmorrhage was found in one cerebral hemisphere, the exact source of which was not clear. About two-thirds of each lung contained tubercles of varying ages and sizes. The other organs were more or less healthy. In giving evidence I described the hæmorrhage and the lung condition, and all went well until the coroner said to the jury, "Have you any questions to ask, gentlemen?" Then up got a juryman who asked, "Was this man ruptured?" At once I realized that this point had not been investigated, and replied evasively, "There was no rupture down at the time of my examination, but the abdominal rings were weak. Yes, I can say he was ruptured." Then came the further question, "Which side, doctor?" I was going on to say that both rings were weak and that it was difficult to say which was the weaker, when the coroner, who I now think saw exactly what was happening, but wanted to finish and get away, intervened and side-tracked the inquiry. It turned out not to be an attempt to "get at" me, but only curiosity. The juror knew the man, had heard he was ruptured, and wished to know more about it. This was a lesson to me always to look for truss marks and herniæ when making an autopsy.

Once when competing for a hospital scholarship I did a most scientific post-mortem but failed to note a

fractured femur, and so lost the game and the rubber—another useful lesson.

It is easier and more successful not to evade this sort of question, but just to confess. At that time, like most youngsters, I did not care to do so; nowadays I should reply, "There was no rupture down when the examination was made, so I did not give special attention to that part, but if you wish it I will go back and see."

It was usually taught, in my student days, that cerebral hæmorrhages do not cause death in less than about four hours, but this was a sudden death.

The extensive tuberculosis which had been present without affecting his health or impairing his working capacity, so far as the relatives knew, has an interesting bearing on all sorts of tuberculosis problems.

(10) Tuberculosis.

Once upon a time I performed, at an infirmary, a series of autopsies on patients who had died of this disease. I wanted to compare the idea I had formed of the lung condition from the physical signs with that actually present. The experience was most instructive, but I should not advise anyone else to undertake similar work as it is not free from danger.

Here are one or two points which occur to me:—

(*a*) In any case of chronic phthisis it is quite safe to diagnose cavities, but physical signs will not reveal exactly where they are, unless there is post-tussic suction or amphoric breathing.

(*b*) A large cavity may give no recognizable signs if cut off from the air-stream or full of pus. In one case no breath sounds could be heard over the upper part of one lung, and vocal resonance was slightly increased. I suspected an area packed with tubercles, but the autopsy showed a complete absence of any tissue or fluid over the upper third of the lung. The cavity, however, did not communicate with a bronchus. Now I think the percussion note would put me on the right track.

(*c*) Tuberculous pericarditis was frequently found, and in one patient had been diagnosed during life.

(*d*) One patient who had been kept for some weeks isolated for whooping-cough was found, post-mortem, to have had tuberculous broncho-pneumonia. This error is well known and irritation of the mediastinal glands is said to account for the cough. Perhaps it is safer, for the nurses' nerves, if for nothing else, to isolate such cases until the discovery of Bordet's bacillus becomes simpler than at present.

(11) Periureteral Lipoma.

Among the many curious, puzzling and hitherto undescribed phenomena I have met with at autopsies, was the *bilateral periureteral lipoma* found at a post-mortem on a middle-aged emaciated woman who had died of Graves' disease. Each ureter ran through the middle of a sausage-like deposit of fat, reaching from kidney to bladder.

This set me wondering how often this condition has been found, and why it occurs; whether it is similar to the deposit in the orbit which causes proptosis, and if it also occurs elsewhere. The thyroid certainly influences the deposit of fat, for myxœdematous patients put on fat, while exophthalmic goitre is associated with emaciation, and this gland may conceivably cause deposits in freak positions through some warping of its function. The fact that fat is deposited differently in the two sexes is in all probability determined by the inter-action of the endocrine glands, of which the thyroid is one of the most important.

(12) An Empyema Adventure.

A miner, aged 40, injured a finger, and the lesion suppurated. After a few days he improved somewhat, then developed diarrhœa, which was said indirectly to have caused exposure to cold and hence pneumonia. Empyema developed and the man died. I was asked to watch

the case for the colliery company concerned. The autopsy was performed in the front room of the miner's cottage, with the blinds down, one spring morning. There were present the village constable, a whole-time doctor employed by a group of collieries for compensation work, the man's own medical attendant and myself. Both doctors were excellent company and the whole-time doctor had one of the loudest and heartiest laughs I have ever heard. We found a double empyema, loculated on one side, and the coroner's jury decided that death was due to natural causes and not to the accident. At the time I thought this correct, but further consideration and the discovery of a pure streptococcus in the empyema pus made me think that the finger infection really caused septicæmia, which led both to the diarrhœa and the lung trouble. We ought to have had a look at the axillary veins as well.

The post-mortem was performed by the colliery doctor while we looked on. The doctors and the constable vied with each other in telling humorous stories, and while the other three of us, mindful of the occasion, were able with an effort to confine our mirth to a noise rather like a hen blackbird, the colliery doctor's hearty laugh, in spite of all our warnings, could be heard not only all over the house, but almost all over the village. This was bitterly resented by the villagers, and one dark night during the winter he was set upon by some dozen men and mauled. His defence was so vigorous that quite half the dozen were equally mauled, but he subsequently thought it best, for his wife's sake, to leave the district.

The patient's own medical attendant was, like myself, an old "Londoner," whom I will call X. During his student days the authorities had considered that his conduct left much to be desired and he had consistently failed in exams.; at last there was some especially *faux pas* and the crisis came. But he had two good friends: (1) the boy in the Warden's office (for mercenary reasons), and (2) an old family retainer at home (for old times' sake).

One Saturday morning friend No. 1 came to him and said: "I have a letter here from the Warden, addressed to your father." "Here's half-a-crown," said X., "and don't post it till Monday."

Friend No. 2 was then requisitioned, and in due course the letter was returned to X. unopened. It proved to be serious: it contained an announcement that he was perfectly hopeless and incorrigible, and a request to his father to withdraw him. There was an inn near the hospital in those days called, I think, "The Good Sam," and it was there that the proprietor and X. together concocted a reply to the Warden. Father was made to declare himself astonished and deeply grieved at the information, but considered that the boy's conduct should have been reported more adequately before, so that he could have aided the Warden to correct him. In ordinary justice, he said, the boy should have another chance. Back went the letter to friend No. 2, en route to the Warden; and so X. stayed on and ultimately qualified.

(13) Burns and Cocoa.

Some autopsies and inquests on burns at the hospital led to incidents worth recording. My first burn inquest occurred during my early days as house-surgeon. I looked in at the receiving room on the way to the Coroner's court, and asked when the child had been admitted. No record was kept of the time in those days, but by ready reckoning the desk concluded that it had been at 11 a.m. When I gave my evidence there appeared a terrible discrepancy, which caused a flutter among the jury. The child had been admitted to hospital at 11, while the accident had not taken place till 11.30! Thereafter a record was kept of the times of entry of all accidents in the receiving room.

On one occasion a badly-burned child subsequently developed surgical scarlet fever. I did not then know that this was not true scarlet fever, so whisked the child away to a fever hospital. A few days later, while taking

the brief hour off duty which a house-surgeon is occasionally able to snatch, I read a news bill from the top of a bus :—

"HOSPITAL SCANDAL."

"Doctor Sends Away Dying Child."

Wondering languidly what Guy's had been doing, I bought a paper and found that I was myself the sinner. The Fever Hospital M.O. had said at the inquest that the child ought not to have been sent there; hence the comment. I tackled our Secretary, who surprised me by explaining it had really nothing to do with me, but with cocoa! It appeared that some agent, anxious to supply the hospital with cocoa, had been disappointed in a contract, and had used his side-line, a news agency of some sort, to avenge himself—wheels within wheels.

CHAPTER V

THE TREATMENT OF ADENOIDS AND TONSILS

To write of "adenoids and tonsils" when referring to a hyperplasia of the lymphoid tissue of the fauces and pharynx appears both unscientific and inaccurate; yet the expression is amply justified. Usage has sanctioned it and it calls to mind a clearer clinical picture of the patient and his symptoms than does any name designed to describe accurately the pathological condition. An experience of some 1,000 operations on tonsils and adenoids in different parts of this country and abroad, together with a special experience of the complications and after-results of such operations gained while house surgeon to the ear, nose, and throat department of a large general hospital, led me to write this paper.

Treatment without Operation.

There are four methods of treatment, which may, of course, be combined in various ways:—

(1) *General hygienic treatment*, that is fresh air and good food, perhaps with the addition of bacon fat or cod-liver oil to the diet.

(2) *Breathing exercises.*

(3) *Drug treatment*, by such drugs as the syrup of the iodide of iron, syrupus iodotannicus and thyroid extract.

(4) *Local treatment* of the mouth, nose and throat, or cauterization of the tonsils.

(1) There is no doubt that children with an adenoid facies, and with symptoms for which most practitioners would advise operation, not infrequently get well although operation is refused. *Fresh air and hygienic treatment*

are of value, doubtless, in aiding this cure, but we must bear in mind that there is a tendency for adenoids to shrivel between the ages of 16 and 20. Moreover, it often happens that when a patient is first seen he is suffering from an acute coryza, or a coryza is just subsiding. It is for this reason that the parent seeks advice; when the acute condition has subsided the adenoid symptoms may disappear.

(2) The value of *breathing exercises* is differently assessed by different observers. Some say they will obviate the necessity for operation on every case of adenoids; others that they are harmful and cause emphysema. An important point in this connection is whether the so-called "adenoid face" is always due to the presence of adenoids. From experience of a number of cases I believe it is not; patients with an adenoid facies by no means always suffer from adenoids, and adenoid symptoms frequently occur without the typical face. It is true that the two are usually associated but this is partly because a given amount of adenoid tissue will cause more obstruction in a congenitally narrow naso-pharynx than in one of normal size. Once obstruction has begun the tissue becomes congested and increases in size, the whole condition becomes worse, and a "vicious circle" is established. Breathing exercises, if properly done, will break this vicious circle in a moderate case and render operation unnecessary. They are also of definite value after operation.

(3) Syrup of the iodide of iron, thyroid extract in small doses, or syrupus iodotannicus, may be of value for doubtful cases. If, however, there are sufficient symptoms to make operation really desirable, it is unprofitable to start a prolonged course of drug treatment when a minor operation, properly and carefully done, will give in a few days the same relief that drugs will effect in as many months, if then.

(4) Many children suffering from recurrent attacks of tonsillitis are rendered as free as removal of the tonsils would make them by the removal of carious teeth and

attention to the hygiene of the mouth. Some parents who will allow the mouth to be treated, object to an operation on the throat. Other local treatment, such as painting the tonsils and the use of a nasal douche, may give benefit when operation is refused, but the danger of forcing septic material through to the ears and setting up an acute otitis media almost precludes douching.

My experience of cauterizing the tonsils is personal and subjective only, as I have not seen it done on others. It does not give the relief of tonsillotomy, but has its uses, especially in patients between 20 and 40 to whom, for many reasons, it may be inconvenient to lie up for a few days, and in whom the danger from hæmorrhage is much greater.

Operative Treatment.

The operative removal of tonsils and adenoids is probably the most successful and beneficial operation in surgery when performed on suitable cases, but some care should be exercised in the selection. The pendulum swings: In one year, the tendency is to scrape the pharynx of every child and remove all adenoid tissue; the next year, we are told that the tonsils and the adenoids are useful structures and must not be needlessly sacrificed. The simplest and safest rules are never to operate for adenoids unless there are adenoids present, and never to operate unless they are causing symptoms. It may be beneficial to remove a pad of adenoids in a healthy child with no nasal obstruction and no symptoms of adenoids, but there will be no observable benefit, and operation is therefore unnecessary. It is not proposed in this paper to dwell on the successful results of the operation, but rather to consider its complications and dangers, with suggestions on how they may be avoided.

In every case the nose should be examined and, if possible, the post-nasal space also, with the post-nasal mirror. I have seen cases in which adenoids have been removed without relief because the obstruction was due

to an intra-nasal deformity and not to adenoids. In two cases for which an operation had been advised I was able to relieve the obstruction, which in one was a piece of india-rubber, and in the other a plug of newspaper. The majority of cases operated on for removal of tonsils and adenoids are not carefully examined beforehand.

I believe that digital examination of the naso-pharynx is rarely necessary. The post-nasal mirror can generally be used, but, if this is impossible, and if the tonsils are sufficiently enlarged to require operation, it is unnecessary to examine the naso-pharynx before the anæsthetic is given. In the absence of enlarged tonsils, adenoids are indicated fairly well by the position of the soft palate; it stands forward in a case of adenoids, and does not move backwards freely when the patient phonates. This position of the soft palate, with the symptoms of adenoids and no intra-nasal cause for the obstruction, is sufficient to justify operation. There are, of course, exceptional cases in which a digital examination is necessary, but in private practice this should be avoided if possible, for it is apt to shake the patient's confidence, a more valuable asset in future treatment than any information the finger can provide.

The many different methods of operating are no doubt equally good in practised hands. The complications described below are those of the removal of adenoids by StClair Thomson's curette, and of tonsils by a Mackenzie spade guillotine, or some modification thereof.

(1) *Tags* of adenoids left hanging in the naso-pharynx are the least troublesome. They may cause no symptoms, but frequently give rise to a troublesome cough or repeated retching. I have known them cause spasm of the glottis, and in one case tracheotomy was necessitated by a tag in the larynx or upper trachea. The causes of tags are various; a blunt curette will leave a tag, because the lowest part of the growth is not properly cut through; a sharp curette used with too much force will cause a tag, by wounding the fascia behind the pharynx, which is too tough to be cut in the ordinary way. Often these tags

cannot be pulled away but must be divided with scissors. A slight tilting of the curette, one way or the other, may cause a tag. The best way to avoid this trouble is to inspect the pharynx carefully at the end of the operation while the throat is being swabbed; if a tag is seen it can be removed before the patient leaves the table. The only satisfactory way to avoid blunt curettes and guillotines is to sharpen one's own instruments. For the guillotines an ordinary whetstone is necessary and for the curettes a pencil-shaped piece of Arkansas stone.

(2) *Injuries to the uvula* are common. The tip may be pressed back and removed by the curette or guillotine. The uvula is also liable to injury by the base of the curette, or it may be caught and injured while removing a tag. A temporary or partial paresis of the soft palate is common, and may be due to stretching at the time of operation or to subsequent œdema. The worst injury that has come to my notice was complete removal of the soft palate; in this case adenoid forceps, and not a curette, were used.

The pillars of the fauces may also be injured to a greater or lesser extent, especially in enucleation of the tonsil. The tongue may be injured with the guillotine, and sometimes tags of tonsil are left, generally of the posterior, or lower portion. These cause disappointment to the parent who looks at the throat, for they make it appear as though nothing has been removed. To avoid such accidents care and a proper understanding with the anæsthetist are required.

Tonsillectomy (chiefly by Sluyder's method) has now generally replaced tonsillotomy. In my hands it caused more bleeding and the reaction was usually more severe, while tonsillotomy with digital destruction of the tonsillar remains gave equally good results. In more skilled hands, however, tonsillectomy is more complete and satisfactory; I did not realize the necessity for a blunt guillotine.

(3) Earache is common enough after an adenoid

operation. It may merely be referred pain from the throat, or it may be associated with a little redness of the drum. Suppurative otitis occasionally follows the operation, and may lead to mastoiditis. I know of three cases in which this has been fatal. One was a boy, aged 6, operated on by the "scraping" method. Four or five days later there was a right otorrhœa, followed by mastoiditis, high fever and delirium. The mastoid antrum was opened about the eighth day after the adenoid operation, and death occurred about the eleventh day with symptoms of meningitis. The second case was a girl, also aged 6, who, on the fifth day after an operation for tonsils and adenoids, had a discharge from the right ear and tenderness at the base of the mastoid process. On the seventh day there was discharge from the left ear, on the ninth the left membrana tympani was incised, and on the tenth the left mastoid antrum was opened and pus was found. High temperature continued, however, with head retraction, screaming, photophobia and vomiting. First the left and then the right eyelid became swollen, and the patient died on the fifteenth day after the first operation. It was considered that a septic thrombosis had spread from the left superior petrosal sinus to the cavernous sinus, but no autopsy was allowed. Of the third case I have no notes, but the patient was a young boy, who died with meningeal symptoms following an otorrhœa fourteen days after the adenoid operation.

Such accidents as these are sometimes unavoidable; to guard against them the operator should examine the child in a general way before operation, get rid of any septic stumps in the mouth, and, above all, avoid operating on inflamed tissue or when large aural polypi are present.

(4) *Hæmorrhage* may be *primary* or *secondary*. Bleeding at the time may be from adenoids or tonsils, usually the latter, or from both. Nurses and medical students seem more apt to bleed than others. I have known of fatalities from primary hæmorrhage, and have

seen cases that were saved only by prolonged digital pressure on the bleeding point. In one case, in which the blade of a defective guillotine slipped out of its groove and wounded the internal carotid artery, the patient died immediately from hæmorrhage. Profuse adenoid hæmorrhage occurred in a patient with congenital morbus cordis. These children often have large masses of adenoids, but the mass seems to be intersected by a network of large veins, and the hæmorrhage is profuse and difficult to check.

Secondary hæmorrhage was the commonest cause for the readmission of patients to hospital. Its onset generally seemed due to sepsis, and happened about the third day. I have known it directly due to taking a hot drink on the third day after operation. I have not seen a death from this secondary hæmorrhage, but I have seen patients so ill that their condition caused grave anxiety.

A colleague of mine tried giving calcium lactate for four to seven days before operation, and our impression was that these patients bled rather more than others, and certainly more than those who had been taking syrup. ferri phosph. co. for a few days. Iron in some form would therefore seem a more useful preventive than calcium salts. Compression with the finger or clamps is the method usually employed to arrest hæmorrhage, but other methods, such as the use of long Spencer Wells forceps or suturing the faucial pillars, may be useful sometimes. I have seen a mixture of gallic and tannic acids rubbed into a bleeding tonsil to arrest hæmorrhage, but I think the benefit was largely due to the digital pressure employed in rubbing.

(5) *Septic infections* after an operation for adenoids and tonsils may be mild or severe, even to the extent of a fatal septicæmia. Glandular enlargements in the neck may occur and form abscesses. Bronchitis is common but broncho-pneumonia is rare. Lobar pneumonia and "surgical scarlet fever" have followed the operation after a few days. I remember a case which was seen a few

days after operation by some tyro and sent to a fever hospital as diphtheria, because of the white patch which occurs on all raw surfaces in the throat. The following was a case of fatal septicæmia following operation. A little girl, aged 3, was very ill from the time of operation onwards. About three days after operation a general purpuric eruption developed and there were terminal signs of broncho-pneumonia. Death took place on the fourth day. At the autopsy phagedænic ulceration in the tonsillar regions was found, together with general glandular enlargement; there was broncho-pneumonia, and small hæmorrhages were universally distributed.

To avoid septic complications, the best plan is to examine the patient before operation, and to take stock of his general condition as well as the throat. Most of these infections occur when the case has been hurried for some reason or another; while the great majority of cases are quite successful, even when rushed, disasters occasionally happen and may bring discredit on the operation.

(6) There are one or two out-of-the-way complications.

I have heard of one case of septic cavernous sinus thrombosis following an adenoid operation, unaccompanied by ear trouble; the infection appeared to have passed through the base of the skull by small veins from the pharyngeal plexus. I have also seen a mild parotitis possibly due to pressure on the gland at the time of operation, aided by a mild septic infection from the mouth.

Causes of death are:—

(1) Anæsthetic deaths, which occur from time to time. The anæsthetic causing these is, perhaps, in order of frequency: chloroform, ethyl chloride, A.C.E., other ether mixtures.

The *status lymphaticus* is said to be especially frequent in cases of tonsils and adenoids, and to increase anæsthetic dangers. It would be idle to deny the existence of the status lymphaticus, but at the same time it is probable that the present-day tendency to regard it as almost the only cause of death under an anæsthetic goes

too far. I know two patients whom an expert anæsthetist refused to anæsthetize because he found signs of the status lymphaticus; yet each was uneventfully anæsthetized by someone else. On one occasion I showed a case before a branch of the British Medical Association as a case of status lymphaticus. The boy was aged 15, and had, in addition to enlarged tonsils and adenoids, enlarged glands of the neck, thymic dullness, and a palpable spleen. I afterwards removed the adenoids and tonsils uneventfully.

To ascertain the frequency of status lymphaticus we must first know the normal size of the thymus, which pathologists inform me varies greatly.

(2) *Fatal asphyxia* may be due either to blood in the lungs, liquid or clotted, or a pad of adenoids, or a piece of instrument in the trachea. One patient spat up part of a bone swab-holder, and another patient part of a broken adenoid curette without harm a little time after an adenoid operation.

(3) *Hæmorrhage*, primary or secondary.

(4) *Sepsis*, septicæmia, broncho-pneumonia or septic thrombosis of the cranial sinuses.

The unsuccessful *after-results* fall under two headings:—

(1) Patients whose symptoms are not relieved at the time—subdivided into: (*a*) Those whose symptoms become relieved later, and (*b*) those whose symptoms do not become relieved later.

(2) Patients whose symptoms are relieved at the time, but relapse later.

(1) (*a*) The usual result in a case with well-marked symptoms is relief within twenty-four or forty-eight hours. Sometimes this result is delayed for some days, or longer, owing to œdema after the operation. Again, cases that have been operated on mainly for recurrent attacks of otitis media may have one final attack immediately after the operation. Deafness also may be unaltered at the time, but may improve one to three months later. Improvement in hearing follows removal of the central adenoid mass without the lateral parts;

the lateral "adenoids" shrivel in time from impaired blood-supply and improved nasal respiration. Not till then is the hearing improved.

(*b*) When a patient is relieved neither at the time nor later, it may be that the adenoids were not the cause of the obstruction. Reference has been made which may be due to foreign bodies in the nose, or a nasal spur, or enlargement of the posterior ends of the inferior turbinated bones, causing deafness. Lack of success may also be due to failure to remove the adenoids, or to partial removal not followed by atrophy. The adenoid operation will not give relief when there is internal ear deafness, or when there is chronic suppurative otitis media due to carious ossicles or some similar cause. Removal of the tonsils does not do away with sore throats, though it generally lessens their frequency, and a chronic bronchitis or enlarged glands in the neck that were troublesome before the operation may continue to give trouble afterwards. Some children with adenoids and tonsils have a curiously nervous disposition, which is often not benefited by operation; children suffering also from hypothyroidism may require additional treatment before their symptoms are relieved. A girl, aged 12, previously in perfect health and showing no obvious adenoid symptoms, had her tonsils enucleated. Nine months later her excellent appetite and robust health had not returned, and she had been listless, showing in many ways the symptoms usually attributed to the presence of adenoids. This seems to indicate that it is an error of judgment to remove tonsils and adenoids when they are causing no symptoms, and that healthy tonsils and adenoids may not be harmful or even useless structures.

(2) *The cases which are relieved by operation but relapse later* include those in which the adenoids or tonsils have "grown again." It would be incorrect to say that adenoids never grow again, even if properly removed in a young child, but usually the cases that recur are those in which the removal has been incomplete, especially when general scraping has been done

rather than a clean removal. The tissue found in second operations is sometimes much harder and firmer than usual, and may be mistaken for a fibro-sarcoma of the pharynx. In some throats it is practically impossible to remove all the adenoids. If the part of the tonsil remaining after using a guillotine is destroyed with the finger, recurrence is very rare; if the embedded part is left it may grow later, or, as frequently happens when there is one prominent and one flat tonsil the flat one becomes prominent after the tonsil has been cut.

It is always wise to be suspicious of "adenoids" after 25 years of age. One case was brought to my notice in which adenoids were removed at 35 years. A recurrence was removed five months later, but a second recurrence showed the mass to be malignant, and the patient lost her life after a complete removal by splitting the palate.

After removing the adenoids the nasopharynx should be palpated and the finger passed round the Eustachian cartilages, where it sometimes meets a resistance, as though adhesions had formed. Probably this manœuvre, if generally adopted, would prevent much deafness and recurrent otitis.

Conclusions.

(1) The operation for removal of adenoids and tonsils remains one of the most successful and beneficial in surgery.

(2) More care should be taken to avoid transforming a trivial operation into a serious one by operating without a general examination.

(3) Only very exceptionally should an operation be performed if symptoms of adenoids are not present.

(4) Enucleation of tonsils is the best operation.

(5) More care should be taken to teach students how to perform this operation before they are qualified; nearly every practitioner is willing to undertake it, and its future credit or discredit with our employers, the general public, depends largely on how it is done by the rank and file of the profession.

CHAPTER VI

THE ASSOCIATION OF GENERAL PRACTITIONERS FOR COLLECTIVE RESEARCH

In the late summer of 1913 two general practitioners discussed the possibility of forming an Association of General Practitioners for Collective Research. Two others were asked to join the discussion, and conversations also took place with the teachers at certain medical schools. The result was the provisional appointment of a chairman, secretary and committee. Dr. Parkinson, of West Hartlepool, was appointed chairman, Dr. Ward, of Stockton-on-Tees, secretary, and Drs. English and Pearson, of West Hartlepool, formed the rest of the committee.

Considerations which led to the Formation of the Association.

(1) Research work and recording work in medicine and surgery are usually done by the specialist. Yet the majority of good cases and those most likely to throw light on the problems of disease are seen by general practitioners, and their value is lost because they are not recorded.

(2) The specialist has difficulty in following up cases or observing them for long enough, and he does not usually see the beginnings of disease.

(3) A settled opinion as to the value of operations and other forms of treatment in gastric ulcer, gall-stones, nasal sinus disease, &c., has not yet been reached. The decided views of ten years ago are now regarded as wrong; possibly the next ten years will see another

complete change in opinion. In this matter the general practitioner can be of great help.

(4) The general practitioner is in the best position to advance our knowledge of the minor diseases and discomforts of daily life (e.g., those accompanying pregnancy), of the commencement of epidemics, and of the value of certain drugs and other forms of treatment.

(5) Apart from the purely scientific value of such an association, its members will keep alive interest in their profession for its own sake, and prevent, to some extent, that unavoidable waning of enthusiasm as years increase. Probably 60 per cent. of men who leave hospital for private practice make a resolution to try to do scientific work of some kind in their profession, and fifty-nine break their resolution. The Association will help them to keep it.

(6) The year before the war seemed exceptionally opportune. A number of practitioners, depressed by the prolonged Insurance Act negotiations and by the partial, if inevitable, defeat which the profession suffered, were inclined to give up hope of anything except the earning of daily bread and provision for their progeny. It was hoped that the association would help to stop this feeling.

(7) Finally it was hoped that the level of scientific attainment and therefore the value of the daily work done by the rank and file of the profession, would be raised.

Next arose the question of the best means of laying before the profession the existence of this Association and its aims and objects. The collective committee of the British Medical Association did not live long, nor was its work very highly considered. A collection of the opinions of practitioners did not give valuable results and a local attempt of the South Eastern branch of the British Medical Association to found a similar association to this did not meet with adequate support and was soon dropped. Profiting by these failures, this association hoped to succeed. The secretary was therefore

directed to draw up a circular, stating the aims of the association and the methods of research proposed, in the form of an invitation to practitioners to join. The subjects selected for collective research were discussed, and it was decided that the number should be large, so that if a member saw nothing in three months to throw light on one subject, he would be sure to give help with another. The following quotation from the circular shows the subjects selected and the way in which they were arranged.

Subjects.

(1) *The treatment of gastric ulcer* and of dyspepsias generally. What cases and for how long does operation benefit? If the benefit is temporary, why does it occur? And why does it cease? Surgery may cure an ulcer; does it cure the tendency to ulcerate? When should we give alkalies—acids—ferments?

(2) *The treatment of gall-stones* and the after-results of operation for them. The surgeons say, operate; some physicians say, use drugs. Which is correct? And does operation cure?

(3) *The influence of different articles of food*, and food prepared in different ways, on the health. The possibility of minor forms of scurvy in adults, the effect of different habits of feeding in different parts of the country.

(4) *The occurrence of urticaria* during convalescence from specific fevers, e.g., influenza, pneumonia, varicella, measles; and the value of calcium salts and other remedies in treating urticaria. This will throw light on anaphylaxis, protective mechanisms, menorrhagia, and calcium metabolism generally.

(5) *The commencement of epidemics* and the natural history of epidemics. The type of disease at the start and its modification during the epidemic. This might show us the gradual modification of some harmless organism to a virulent and well-recognized form, and its attenuation again as the epidemic subsided.

(6) *Cardiac irregularity* in health and disease. The dyspeptic extra-systole and its causation are of interest. Are there also pulmonary, hepatic, and perhaps uterine or other extra-systoles? What significance have these?

(7) *The minor diseases and discomforts of pregnancy*, and the influence of pregnancy or menstruation on other diseases, or of other diseases on pregnancy or menstruation.

(8) *The treatment of nasal sinus disease*, especially the after-results of operative treatment. These operations generally seem unsatisfactory; are they worse than expectant treatment?

(9) *The value of certain prescriptions or drugs.*—Every doctor has one or more pet prescriptions or drugs which he believes to be of great value in certain conditions; one or more of these will be investigated. It is proposed to begin with drugs, as this is simpler. The following have been selected: (*a*) ichthyol; (*b*) the sulphocarbolates; (*c*) urotropine.

(10) *Curious cases.*—We all meet cases we do not understand; a colleague is called in, and yet we are no wiser. These may be conditions hitherto unrecognized, or unrecognized in these islands; pellagra for instance. These cases will be recorded, and may lead to progress.

(11) *The infectivity of pulmonary tuberculosis.*—This may seem obvious enough, but has not yet been carefully worked out. Careful records, e.g., of infection of husband by wife, or vice versa, or of a child by an adult, are needed.

(12) *The value of different treatments* in pulmonary tuberculosis. (*a*) fresh air; (*b*) cod-liver oil; (*c*) drugs; (*d*) tuberculin—(1) by the mouth; (2) hypodermically.

It was decided to send this to men personally known to the committee, with a request to each recipient to send the names of others who might be interested. It was decided also to try to get someone to father the scheme, the Dean, or some member of the honorary staff, at each of the teaching schools in Great Britain and Ireland. As far as possible, also, each member of the

Association was to bring it before the fellow members of his local medical society.

Difficulties anticipated and How they were to be Met.

(1) *To get Sufficient Members.*—A suitably worded circular was considered very important, and also some *personal* recommendation, either direct or indirect, to each man circularized.

(2) *To get Contributions.*—Each member was asked for one contribution a quarter, if only the post-card record of a case. If no contribution was received for six months a reminder was sent.

(3) *Poorness of Contributions.*—It was felt that the majority of contributions would be poor in quality at first, but as men got more used to the work they would improve. The committee were to sift them and ask for further information where required. The Association pinned its faith on the younger generation, Men were to continue, when in practice, their hospital habit of recording and observing accurately, and if they joined the Association on leaving hospital would not have to start afresh.

(4) *Professional Jealousy.*—It was fully realized that some members might be unwilling to trust their babies to other people, so to speak. The Association did not wish to prevent in any way independent contributions to literature from individual members, but only to collect material on certain points, and to encourage members who would not otherwise record anything to send their records to headquarters. It was also decided that, as a general rule, any articles on special cases published by the Association should be published under the name of the contributor, and that the form of publication should receive his consent beforehand. Also, if members preferred to send material to the central rather than to the local secretary, this could be done.

(5) *Finance.*—It was felt that an appeal for money might be misunderstood, and moreover, that it would be unfair as the Association would at first be in the nature of an experiment. It was decided, therefore, that the committee would pay all initial expenses out of their own pockets; if the experiment succeeded an appeal was to be made to members for money to carry on.

(6) *The amount of material collected* might be difficult to deal with after a time, but certainly not for a year or so. As the membership increased it was proposed to decentralize more and more, to appoint local secretaries, and perhaps to allot different subjects to different men.

Results.

The reception of the scheme was more favourable than had been anticipated. As expected, the majority of people written to did not reply, but of those replying practically all joined at once, and 90 per cent. with considerable enthusiasm. The effect of the Association in counteracting the Insurance Act depression was mentioned frequently by new members, and the encouragement offered "to do a little work, and get an M.D. thesis written," was extolled. It was considered that fifty keen men would be sufficient to start the Association, but before it had been in existence for a full quarter, the number was rapidly rising to 200. The medical schools responded well, and the Dean or some member of the honorary staff fathered the scheme at all the English schools, and the two small universities of Galway and Cork in Ireland. Sir William Osler looked after the Association at Oxford, Professor Sims-Woodhead at Cambridge, Professor Harvey Littlejohn at Edinburgh, and Professor Dixon at Dublin. The best response from medical schools came from the Dreadnought School at Greenwich and the next best from St. Thomas's Hospital.

The local medical societies were approached gradually, and the Council of the medical Section of the Royal Society of Medicine gave approval and support, and

arranged that members could have their papers read and discussed before the Society.

The Great War and the secretary's illness suspended, alas! indefinitely, the Association's activities. Practitioners enthusiastic enough to join us were also the most eager to join up when war was declared. Since then, several members have expressed a wish to recommence work, but no one has been found to take over the secretaryship. The James Mackenzie Institute considered whether they could utilize the membership but decided that their work would be more useful if limited to St. Andrew's.

Resurrection is still possible.

CHAPTER VII

AS OTHERS SEE US

An attack of sciatica drove me for a week-end to a hydropathic establishment at a well-known health resort. A patient myself, I remained strictly incognito, and successfully avoided recognition as a medical man. It was a dull life, though it only lasted for a few days, and my chief amusement indoors was discussing with my fellow-sufferers medical treatment and the profession of medicine from the lay point of view. We all know that the medical profession, in common with other so-called learned professions, is often scoffed at and derided by the public in its leisure moments ; but I was not prepared for the unvarying dislike and distrust shown by fellow guests. It may be thought that I acted the part of *agent provocateur*, but actually my only care was to avoid recognition, and conversation was usually opened by another patient asking me for advice about a medical man. The discussions provided much instruction, amusement, and food for thought.

Incident No. 1.—We were seated at the fireside and our conversation had turned in the usual direction. A lady told me that her mother had been *permanently lamed* by some doctor at Buxton, who made her walk to his nursing home for massage every day. The knee-joint was affected and got no better, and when she consulted another doctor in London, she was informed that the Buxton treatment had permanently injured the joint. On this story another member of the group commented that : " Yes, it is a curious thing that if you are maimed for life or seriously injured by someone in any other walk of life, you have legal redress, but not against a doctor. It is a shame ! "

The discussion continued and a little later another

gentleman remarked: "It is the greatest possible mistake to stick to one doctor; a change now and again may throw fresh light on your disease and more trouble will be taken over the case."

Incident No. 2.—Another day I remarked in conversation, "There must be a lot of doctors in X?" "Yes," said my acquaintance, "ninety-six, I believe," pause, and then—"parasites!—fattening on poor devils like you and me. They collect in X like maggots in a ripe cheese." I assented.

Incident No. 3.—Some guests were discussing the Insurance Act in relation to the medical profession. One of the group remarked, "No doubt about it, this has put money in their pockets." Then followed a little calculation as to what 2,000 or more patients on a panel would mean. "Yes," said a lady, "but can they possibly do all this work properly?" The reply was, "No, of course not, but they don't mind that. I'm afraid that doctors, like the rest of us, are out for what they can get. No doubt there *are* doctors who are strictly upright and honourable men, but the majority of them want their heads cutting off."

Incident No. 4.—A visitor asked why I came to X.

"Sciatica," I said.

"Under a doctor?"

"Yes, but not here."

"Taking the baths?"

"No, I was supposed to take them, but I'm only here for a few days and thought it hardly worth while."

"Well," said he, "perhaps you're right, I'm under a doctor here because I think it may save me from taking the wrong baths or drinking unnecessary water, and so be cheaper in the long run. But," he added sagaciously, "I don't let what he says prejudice my judgment too much."

It was interesting to learn how we are talked about. In this abuse, of course, there is much that is slanderous and baseless, but there is a substratum of truth here and there. The advice to change doctors from time to time,

for instance, is perhaps good though somewhat callous. In any case it seems high time for us to take seriously the opinions that others have of us to find out why they hold these views, and see if anything can be done to alter them. The present-day opinion about doctors seems to be much what it was in the eighteenth century, if one may judge from the interesting comments in Fielding's "Tom Jones," so that perhaps we have no great cause for complaint. On the other hand, twenty or thirty years ago our reputation was higher, and the confidence in us greater, than to-day. We have fallen from our high estate. Why?

First, there is a tendency for the public to despise the *learned professions*, Church, law and medicine, because they *profess learning*, and the public despises learning. There is some justification for this, because to be a great man of learning requires brains certainly, but not so much *general ability* as to be a successful business man. Business ability means a very high order of common sense; some medical men, but not the majority, have business ability as well as learning. A successful business man notices this defect in certain of us, and from them forms his opinion of us all.

Secondly, we owe the bad opinion of the public, to some extent, to our frankness *en famille*. The young doctor and medical student, perhaps not realizing the imperfection of all human endeavour, retails in the home circle various medical and surgical scandals; the older doctor may retail scandals that have happened to his colleagues. Very many families number a doctor or medical student among the members of their circle, and the public enjoys and readily passes on bits of medical scandal. Little by little this has an effect on public opinion. Similarly, the way we speak of each other in general is not without effect. The consultant frequently speaks of the general practitioner with a snort and a curl of the lip, and the general practitioner speaks likewise of the consultant. So that the public are inclined to believe in neither.

Thirdly, I think the obvious advertising methods and

the push of some of our brethren, while they claim all the time a lofty altruism, have brought discredit on us. Perhaps the younger generation will retrieve this reputation; it is not impossible.

Lastly, we must blame the Insurance Act, and the fact that the profession has become a pawn in the political game. Viewed dispassionately, it is probable that the Act, owing to the exertions of the British Medical Association, gave to medical men the best terms that could be expected, though the defect in detail makes it arduous to work, and it is not sufficiently adaptable to each locality. But our semi-public discussion of the Act made it manifest to the public that we were not united, indeed, not even business-like. This, and the hard things said by politicians about doctors, have helped to bring us into contempt. No doubt the Act is to blame for much, but it is not the one and only cause of this bad opinion, which is of a slower and an older growth.

The remedy is more difficult, for nothing will alter human nature, and it is only a form of platitude to write about maintaining a high standard of professional conduct. Still there are certain matters in which something may be done by individual members of the profession, which in time may make a difference to our reputation.

(*a*) One is to remember that we are always, so to speak, in the limelight, and actions and words that may be scarcely considered by ourselves are quoted or imitated by patients, so that we have to be more careful than any other class in the community of what we say or do.

(*b*) Though sometimes it may pay, for the moment, to humbug a patient who asks to be humbugged, as patients often do, yet the safest rule and the one which pays best in the long run is never to humbug patients, whether they ask for it or not.

(*c*) Again, no doctor should take serious notice of anything a patient tells him another doctor did or said, even if the doctor named is a rival. The patient's statements may rightly be made the ground for an inquiry, but without definite confirmation they should never be

believed or made a source of action. A personal chat with the accused doctor will often throw an entirely different light on the whole question, and may turn an enmity into a life-long friendship.

Someone has said, "All patients are liars."

(*d*) Another point we ought to allow to the public is an independent second opinion. At present it is considered contrary to medical ethics for patients to obtain an independent opinion about their case. The attending doctor must call in someone else, or the patient is sent to a second doctor by the first, and there is a consultation. The relatives often feel, and sometimes with reason, that such advice is not really independent. Naturally enough, an independent opinion is often obtained by the patient without his doctor's knowledge, but this may come to light later and cause unpleasantness between doctor and patient, or between the two medical men concerned. It would not do away with professional jealousy, but it would save a lot of small troubles, if doctors, as a body, frankly conceded the right to an independent second opinion. From a selfish point of view also it is probable that it would not diminish our consultations, for not infrequently a third opinion is rendered necessary by an independent conflicting opinion.

(*e*) Perhaps further spade work can be done by every doctor making it a point of honour to defend his profession when attacked, and explain, with such patience as he can command, the difficulties with his brethren that the layman relates. This point I put last, for it is, perhaps, the least valuable, because the public are so unreasonable when speaking of doctors, and it is difficult to argue without a full knowledge of the facts. Still, it may be worth doing.

CHAPTER VIII

DIARRHŒA AND VOMITING IN CHILDREN[1]

In every discussion on diarrhœa and vomiting in children, it must be clearly stated at the outset that diarrhœa and vomiting are symptoms, and may appear under many different conditions. Much trouble arises from failure to realize this, and many errors in diagnosis are made. The Receiving Room Officer is content to diagnose and the House Physician to treat "D. and V.," without making any serious effort to differentiate between the underlying conditions. The vast majority of cases seen in London hospitals belong to the epidemic class, but the records of the London Hospital for the years 1903-6 show that odd cases do arise in which a symptomatic diagnosis may be disastrous.

I.—Classification.

A classification is, after all, only an aid to memory. Osler divides the cases into three classes; other writers would make a greater number, up to seven or even more, but all agree that one variety may change into another. Perhaps it is best to take the simplest possible classification, that of acute and chronic.

(1) Acute cases with a history of thirty-six hours or less, but nevertheless very ill on admission; (2) chronic cases with a history of illness lasting a few days to a few months. Between these two there is every intermediate grade. The chronic cases are far commoner.

II.—Ætiology.

Only 3 per cent. of the cases occur in breast-fed children. Dirt and bad surroundings make the disease more frequent. The infant seems especially vulnerable between six and eighteen months.

[1] A paper read before the London Hospital Medical Society.

Heat has a definite relation to the disease, and as soon as the average temperature for the twenty-four hours reaches 60° F. we get a wave of cases. The great majority occur in July and August, but the admissions run on into September and October. Probably the returns of the Registrar-General are misleading, for many cases which start in July die of a recurrence or of marasmus in the later months. Readmissions in these later months also spoil hospital statistics. Barometric pressure and the humidity of the air do not appear to have any definite significance. Teething children are certainly more liable to be attacked. Chill is an important ætiological factor. There is no doubt that infants are easily affected by chill. Lift up a child about 2 years of age in the Receiving Room in the usual way—by the arms. The clothing is dragged upwards and the child's body is exposed, if not to the axillæ, at any rate to the umbilicus. At night the child is also liable to exposure by kicking off the bed-clothes. Going round the children's wards, one frequently sees an infant lying with its legs and abdomen partially exposed, because it has kicked away the bed-clothes and dragged its garments up. This can be avoided by pinning the night-gown with a safety-pin between the legs, which does not increase nursing difficulties.

Bacteria.

Bacillus coli communis and *Bacillus lactis aerogenes* are constantly found in the fæces of healthy infants, and are often the only bacteria present. Although they do not disappear in summer diarrhœa, more than forty others have been isolated, none of which appear to have any constant relationship to the disease. Booker says that definite forms predominate in certain varieties of the disease: in serious chronic cases, *Proteus vulgaris*; in cases with marked toxæmia, cocci; in the milder forms, *B. coli communis* and *B. lactis aerogenes*. It is interesting to note that the blood-serum of infants with summer diarrhœa has been found to agglutinate Shiga's

dysentery bacillus. The value of microscopy of the fæces as an aid to diagnosis or prognosis is probably very small.

Dr. Hutchison has pointed out three reasons why infants are more susceptible to diarrhœa than adults.

(1) Their staple diet is milk, a food easily contaminated.

(2) The amount of hydrochloric acid in the stomach of an infant is small, and hence the sterilizing power of the stomach is less than in an adult.

(3) Infants are especially liable to chill.

III.—Pathology.

There is little to say on the pathology of summer diarrhœa. The mucous membrane of the intestine is usually pale and covered with mucus. Peyer's patches and the lymph follicles are swollen and may be eroded, and in severe cases this process may go on to sloughing and ulceration. The mesenteric glands are enlarged and somewhat softened. The other organs are normal to the naked eye. Microscopically, necrotic foci in the liver and also in the spleen and kidneys are sometimes found: and nephritis is not very uncommon. The kidney then somewhat resembles, to the naked eye, the "large white kidney" of later life. Broncho-pneumonia is extremely common; lesions of the brain are uncommon, but meningitis and thrombosis of the sinuses are occasionally found.

IV.—Symptoms.

The sunken eye, the feeble cry, the shrunken inelastic skin, are familiar to everyone. The onset of the disease may be sudden or insidious. In some cases vomiting is the most marked symptom, in others diarrhœa, while in a few attention is chiefly drawn to the passage of blood and slime. The predominant symptom depends largely on the part of the alimentary tract affected by the disease. If three men swallow an irritant poison,

the first may suffer from violent vomiting, so that most of the poison is rejected before it reaches the intestine. The stomach of the second may be less sensitive, and violent diarrhœa predominate, while in the third the poison may get as far as the colon and set up an acute colitis.

Convulsions are common in summer diarrhœa, as in all diseases of infants. Cramps are perhaps commoner than is usually recorded, for an infant cannot tell us its feelings, and a cry attributed to fretfulness may perhaps be due to cramp. The temperature varies enormously. I have searched in vain for some definite relationship between the course of the disease and the temperature. Sometimes the temperature is high on admission and subsequently falls, or it may be low on admission and rapidly rise; or it may be irregular throughout. As the child gets worse diarrhœa may cease; and it is a remarkable fact that our worst cases, as judged by the death-rate, have neither diarrhœa nor vomiting after admission. The child is at first restless, but later listless. There are some cases in which restlessness is more marked than usual, so that it has been suggested that the cases may be divided clinically into a restless and listless group, and that the restless group should always be treated with opium or morphine. The division seems too artificial, for the cases, as a rule, pass from the one condition to the other. As the child gets weaker, there is a marked loss of muscular tone, and when the head is lifted, it tends to drop back as if the neck were broken. The voluntary muscular movements also become sluggish, almost like the movements of unstriped muscle. Cheyne-Stokes respiration may occur, and may be connected with the kidney condition. Suppression of urine may take place. Head symptoms, such as retraction, twitchings or convulsions, are not uncommon, and frequently give rise to the diagnosis of meningitis, for which lumbar puncture has been done.

The worst cases of diarrhœa and vomiting in hospital are the chronic ones, and a history of "D. and V. one

week," "one month," or "since birth," generally means an unfavourable prognosis. Cases that have been attending out-patients, and which are therefore chronic, do not do well. The chronicity of the disease is often overlooked. The admission of moribund relapse cases is common, and in private practice it is even more noticeable how frequently the disease recurs, and that the return of normal motions does not necessarily mean cure. Relapse after relapse occurs, and the child is left—after months of diarrhœa—"wizened, flabby, and with dainty bowels."

I have endeavoured to find out from practitioners and others with experience of the disease, whether the colour or appearance of the stools is of assistance in prognosis; from the answers received I can only conclude that it is not. Very foul-smelling stools appear to indicate a severe case, but the colour does not help. The stools certainly vary much from day to day, and often one description is given by the mother, another by the house-physician, and a third by the clerk in charge of the case; all three totally different. The presence of undigested curds is, of course, important. A form of stool worth special mention is the spinach-green stool. I do not know of any other condition in which this occurs. It appears to be due to the presence of biliverdin instead of the normal bile pigment bilirubin. The explanation of this change should not be difficult, considering that the alimentary canal is swarming with bacteria, and so many abnormal fermentative changes are taking place.

V.—Complications.

The number of these is considerable, but their frequency is difficult to estimate, as some come under the surgeon and others under the physician.

(1) Alimentary tract.—Ulceration of the bowel may occur, but prolapsus ani is perhaps the commonest surgical complication. A striking instance of intussusception was in hospital recently.

An infant was admitted from the out-patient department, collapsed and ill, suffering from diarrhœa and vomiting. I

thought to myself—" we will cure that infant, and then at the meeting it can be handed round, a rosy-cheeked youngster, accompanied by suitable charts of temperature and weight." On the evening of the second day after admission the child was to all appearances progressing favourably, but at 5.30 a.m. it vomited and died suddenly. The autopsy revealed several post-mortem intussusceptions: another had evidently occurred a short time before death, judging, amongst other things, by the congestion around it, and this appeared to be the cause of the sudden death.

(2) Skin complications include " scalding " round the anus, and suppurating foci, due to lowered powers of resistance. The usual inelastic skin becomes in some cases tough and almost leathery, a condition known as sclerema. This is said to be fatal. Œdema of the feet may be due to the extreme lowering of the blood-pressure. Urticaria occurs occasionally, especially in older children, and purpura is also sometimes met with, and may be accompanied by brown vomit.

(3) Cardio-vascular System.—Heart failure is the usual cause of sudden death. Thrombosis is sometimes found, generally in the longitudinal sinus. I have never seen a case, but have been told that it is usually easy to diagnose, as it is accompanied by distension of the veins and œdema of the forehead and eyelids.

(4) Nervous System and Sense Organs.—It seems common enough for cases of general tuberculosis with meningitis to be at first diagnosed and treated as summer diarrhœa.

Corneal ulcers and otitis media are occasionally met with.

At most autopsies the middle ear is found to contain a turbid purulent-looking material; films of this pus reveal a diplococcus resembling the pneumococcus. This may be regarded as an otitis media; but many pathologists hold that it is the normal secretion of the middle ear, and that the cocci multiply there after death.

(5) Respiratory System.—Broncho-pneumonia is present in over 30 per cent. of the cases which come to

autopsy. It is probably terminal and is due to the inhalation of vomit during collapse.

(6) Children who have had summer diarrhœa are especially liable to acute specific fevers and to tuberculosis.

VI.—Diagnosis.

It is important to remember that diarrhœa and vomiting are symptoms; we have to decide, if possible, which part of the alimentary canal is chiefly affected, as this determines treatment. If the stomach is chiefly affected, vomiting is pronounced; if the small bowel, colic and fever; if the large bowel, large borborygmi and small and frequent motions are the prominent symptoms.

Intussusception is the most important condition to be differentiated from summer diarrhœa, especially as diarrhœa may precede the intussusception. A fair percentage of cases admitted to hospital with intussusceptions have been sent away previously from the Receiving Room as "D. and V.," and if we add to this percentage the number of cases of intussusception that have been treated by outside medical men as diarrhœa and vomiting, the total is considerable. As a rule, there are marked differences between the two conditions.

(1) The child is thin and shrivelled in "D. and V.," comparatively healthy-looking in intussusception.

(2) Blood and slime in the motions suggest intussusception or colitis, but only about 2·5 per cent. of the infants brought to the Receiving Room because they are passing blood and slime have got an intussusception. It seems an arduous task to make rectal examinations on all these patients, but for the sake of the odd case it is worth while.

(3) If there is bile on the child's napkin it indicates colitis; but this sign may fail in difficult cases. There may be bile in a subacute intussusception and in a case of colitis it may be absent.

(4) A tumour is felt in the majority of cases of intussusception, but it comes and goes. An abdominal

swelling may be felt by the Receiving Room officer; the house-surgeon may fail to find it, but later, in the wards, or in the operating theatre, it is again palpable.

(5) The end of an intussusception may be felt *per rectum*, and a bimanual examination with one finger in the rectum is also of great assistance.

Rectal examinations are very unpleasant for the doctor, more unpleasant for the patient. They are very important for the doctor, more important for the patient. It is useless to introduce the finger in an aimless and absent-minded way without remembering the reasons for the examination. I have seen the rectum of an infant examined as if for an enlarged prostate.

In examining for the internal opening of a fistula in an adult, for instance, it is useless to thrust the finger up to its base in the rectum. If this be done, an insensitive part of the finger comes in contact with the region to be palpated. The tip of the finger must be gently passed round just inside the anal orifice, so that the depression or papilla marking the fistulous orifice is felt. It is useless to thrust the finger straight up the rectum to feel a mucous polypus. If the polyp be attached high up it merely retreats in front of the finger, and nothing abnormal is felt. The correct method of examination in this case is to introduce the finger, and then to make a swift, almost rough, circular movement, and catch the polyp.

The sphincter is often relaxed when an intussusception is present. If it is not relaxed the tumour is probably not far enough down to be felt. The intussusception is said to feel like an os uteri, but this is not always true. I should prefer to describe it as like another finger coming down to meet your own. It clings to one side of the bowel, so that if not careful you may go past it on the other side, and sometimes it is comparatively soft.

Other conditions that may be mistaken for summer diarrhœa are acute poisoning, accompanied by diarrhœa and vomiting; and also the onset of specific fevers, especially scarlet fever.

VII.—Prognosis.

Hipprocrates had the advantage of being the first to say, "Never despair of a sick child," but any case of diarrhœa and vomiting in a young child, however trivial, may become very serious. When vomiting is a prominent and early symptom, the prognosis is not so good, whereas when the colon is affected, with frequent passage of blood and slime, though the parents are more alarmed the child often does better.

In the acute cases the prognosis seems better on the whole than in the chronic ones. This is probably because, in the acute cases, the loss is mainly a loss of water from the tissues, while in the more chronic cases there is loss of fat and considerable tissue wasting as well. I believe that one reason why a sick child so often picks up again when the case appears hopeless is because the idea of death is absent. An adult who begins to think about death and gets the idea he is going to die at once puts a formidable obstacle in the way of recovery. I remember a man suffering from heart failure whose death appeared imminent every moment. He declared that he was going to die at about 10 a.m in two days' time. The night before death he was pulseless and appeared *in extremis*. Paracentesis of the right pleural cavity was performed and a pint of blood-stained fluid withdrawn. In spite of the shock of this proceeding the patient lived through the night and, although much better the following morning, he died at about 10 a.m., as he had said he would. I believe that this man suggested to himself that he should survive for that length of time, and was able to do it by a certain amount of mental effort, just as there are exceptional people who can awaken themselves at any given moment in the morning.

VIII.—Treatment.

There are three lines of treatment for every disease. First, there is physical treatment, at which hospital

training generally stops. The treatment I mean by rest in bed, warmth, local applications and by drugs.

Secondly, there is mental treatment, by no means confined to Christian Scientists. Means are taken to give the patient a suitable confidence in himself and in his medical adviser, and to give him also a suitable hopefulness.

Thirdly, there is social treatment. It is necessary to create a suitable social atmosphere around the patient. The relatives must have confidence in the doctor; they must believe that he thoroughly understands the case and that everything possible is being done.

For children comparatively little mental treatment is required, but social treatment is very necessary. Only by strict attention to this line of treatment can the doctor get his instructions properly carried out.

The methods of physical treatment of diarrhœa and vomiting vary exceedingly, and this means, as in other diseases, that it is either very difficult or very easy to treat. Absolute quiet is essential, and the child should not be nursed in the arms. This advice is more important in private practice than in hospital. It is not uncommon to see mothers nursing a fretful child suffering from summer diarrhœa, and jigging it up and down all the time vigorously enough to upset the more stable stomach of a healthy adult. Some well-known authorities also forbid washing the child to avoid a chill. If washing is allowed it should be done with the greatest care. A binder should be used and the nightdress should be pinned between the legs to avoid exposure. Washing out the stomach is very useful and not difficult. Washing out the colon with a soft rubber catheter is also good, especially for patients with symptoms of colitis. Both the stomach and colon may be washed out in the same patient, but it is as well not to wash them at the same time. It seems as if some children die from over treatment. First, the stomach is washed out, then the colon, and lastly the child is given subcutaneous infusion; it dies a few hours later. Various solutions may be used

for colon lavage; normal saline solution is perhaps the best, as the child will absorb some of this and satisfy his need for water.

Subcutaneous infusion often disturbs the patient considerably, and the exposure necessary for cleaning the skin may cause chill. I have not seen intraperitoneal infusion used, but it is likely to produce shock, in addition to the danger of introducing sepsis. A mustard bath or pack is very useful for collapse, and in some hospitals is used as soon as a child is admitted with summer diarrhœa. A warm pack is also valuable, especially when the skin is dry and inelastic. Stupes and poultices sometimes relieve abdominal pain and assist sleep. They are often necessary as a form of social treatment.

The one important dietetic point is to stop the milk, and not to start it again too soon. Often, because a child seemed to improve rapidly, milk was quickly restarted and a fatal relapse occurred. I well remember a private case where the infant appeared to be improving, and I weakly yielded to the joint persuasion of nurse, mother, relatives and friends to allow them to recommence milk feeding. The child became worse immediately and died in two days. It would probably have lived if milk had been withheld a little longer. The social side of the treatment, however, has to be considered, and so one may give rice water, albumen water, or veal broth in small doses with a spoon. A drachm or two drachms may be given at first. It has been said that "a drachm retained is worth four ounces vomited." Brandy may be given with any form of water used; say half a drachm to the half pint. Some give a few minims of champagne.

When the infant can take more, whey may be given, or condensed milk (the unsweetened "Viking" brand or Nestlé's), 1 dr. to 3 oz. of water. Children seem to prefer the sweetened milk, but the unsweetened is generally more successful. Dr. Eustace Smith attaches importance to frequent alterations in diet; children, just like adults, he says, take their feeds better if the diet is varied; rice water may be substituted for albumin

water, or whey for rice water. Routine in diet is dangerous, and each case must be considered on its merits. It is most important to start anew on each case every day and to reconsider everything, altering diet or drugs at once if they appear unsuitable.

Drugs are perhaps the least important part of the treatment, which should never start with astringents. The child dies from the absorption of poisons from its intestine, and therefore the bowels must be kept open. Castor oil, calomel and hyd. with cret. are all good. Castor oil often causes vomiting, so that the others are better when vomiting is a prominent symptom.

When the acute stage of the disease is over, a prescription such as the pulvis bismuthi et calomelanos infant. of the London Hospital Pharmacopœia is useful. My experience of this powder, however, is that it makes the mouth rather dry and unpleasant. It would, therefore, seem better to give only 5 gr. of bismuth or to omit it altogether. Eustace Smith recommends silver nitrate, especially for cases with watery diarrhœa and green stools.

Special symptoms may require special treatment. Children with an inelastic skin can be given a hot pack and small doses of spirits of nitrous ether. Some restless cases call for opium.

A most important point in treatment is to give instructions in writing, noting the exact times and exact amount for each feed, and the exact hours for the medicines. This has many advantages; it inspires confidence; it makes certain that the treatment is carried out; and it reminds the doctor of the line of treatment he is adopting.

The four points which appear most important in the treatment of the disease are:—

(1) Treat each case on its merits and as a fresh case every day.

(2) Stop milk.

(3) Use aperients.

(4) Do not discharge too soon.

CHAPTER IX

TALE OF A WAYSIDE INN

My work takes me wandering about Devon, and sometimes, especially in winter, it is preferable to lunch in some local inn rather than to munch sandwiches by the roadside. I lunch in the commercial room, where it is generally possible to conceal my identity; from the appearance of my bag I am usually taken for a traveller in gramophone records. Much information and interest are to be gathered from my fellow commercials who are, generally speaking, a class too little appreciated.

My companion on the day of the story was a well-preserved, vigorous-looking, middle-aged man, who might have been anything between 45 and 65, but was probably nearer the second figure. Starting about his son, who was a major in the army, the conversation drifted from one subject to another until, after touching on the well-known play "Damaged Goods," my companion started his story:—

"Strange thing happened to me once—funny too—but I didn't think so at the time. It may have been thirty or more years ago. I found my tongue getting stiffer and stiffer, but thought nothing of it—thought, may be, I'd been talking too much. Then one morning I looked at the tongue, and felt it, and there was a nasty hard lump not far from the tip. I went to see my doctor, a very good sort; I liked him very much; he's dead now. He gave me a mouthwash for a week and then said he didn't like the look of the tongue and I ought to see a specialist.

"'Who's the best man?' I asked.

"'B is the greatest man on tongues,' he said; 'so you'd better see B, he lives Harley Street way.'

"I went to see the great man a day or two later.

He blotted my tongue, and looked at it, and blotted it again, and pinched it, talked to himself, and looked at it again. Finally he said, 'I don't like the look of your tongue, would you mind calling back in an hour's time, as I should like one or two friends to see it?'

"He drove me round to where his friends were later in the day, and they all blotted my tongue, and pinched it, until they were tired—or at least my tongue was. They left me in a room alone for a while, then B came back and said, 'I'm very sorry to say it's a cancer you've got on your tongue, and there's nothing for it but to cut it off. If you go round to my nursing home to-morrow morning, I will arrange to have a bed ready for you.' Well, you can imagine what I felt like—tongue a little stiff, a little lump on it, but no real pain, and I am to go into a nursing home and have it cut out. Would you like to have your tongue cut out?"

"No, certainly not," I responded, this being the most suitable reply I could find.

"Well, I didn't like the idea at all, I can tell you," my fellow-traveller continued, "so back I went to my own doctor to talk it over with him. He said that if B wanted to take my tongue out I had better let him do so. The only alternative he could think of was to go and see an old boy called Jonathan Hutchinson before submitting to operation.

"You may be sure I went to Jonathan Hutchinson the very next day, and there we went through the same process again, but it was rather shorter. 'Well, doctor, what is it to be?' I asked.

"'I have no doubt we can soon cure that,' said he, 'it will be all right in about a fortnight.'

"You can guess I could hardly believe my ears. For a few days I was to come up daily and let him paint a picture of it, then he would cure me. I sat with my tongue out for an hour or so a day, until a very nice lady was satisfied with her picture. I'd have sat with my tongue out for a month if it would have done anyone any good, so long as I was going to keep it and not have

it cut out. Jonathan Hutchinson was as good as his word, too, and *in fourteen days the tongue was all right and has never been wrong since.*"

"How very extraordinary!" I interposed.

"Syphilis, that's what it was, sir, syphilis!" he said, thumping the table at this climax.

"And did Hutchinson ever discover how you got such a disease in such a strange place?" I asked.

"Oh, I soon found out about that," he replied. "There was a great pal of mine that I used to play billiards with—he had syphilis, but of course I didn't know. We used to put our pipes down when we made our shots. The pipes were rather alike and one evening I got his by mistake and smoked it the rest of the game. I tackled the beggar with it, too, but all he said was, 'Well, I never asked you to smoke my pipe!' I didn't mind very much about it either so long as I kept the tongue."

Having been house surgeon to Mr. Jonathan Hutchinson, junior, the story much interested me, especially as I knew most of his father's pictures and thought I could remember even this particular tongue. I was also reminded of a frequent saying of my old chief, a very useful admonition too, "Never forget syphilis."

Now for a second story.

A practitioner in South Devon, intelligent and modest, but prehaps not up to date, had an elderly patient who developed a fluctuating swelling, rather larger than an ordinary, somewhat elongated hen's egg, over the right shin. My friend thought of all sorts of diagnoses but could not quite make up his mind. The patient thought it might be syphilis, as he had contracted the disease in his youth "when sowing wild oats." He was treated with iodides, but could not tolerate large doses, and in spite of all treatment the swelling remained. Patient and doctor were getting used to it, there was no pain, and so things went on for six or eight months. Then came on the scene a young and pushful surgeon, recently from hospital, who had married the patient's daughter.

This young man was much troubled about the leg, and almost insisted that his father-in-law should go to town and see the well-known surgeon, Mr. S.

So my friend took his patient to Mr. S., who looked at the leg, aspirated the swelling, withdrew a blood-stained fluid, and then retired with my friend for a consultation. The consultation was not lengthy. Speaking *ex cathedra*, Mr. S. at once said, "The old man has a sarcoma and must have his leg amputated forthwith or he will be dead in six weeks."

"Oh, I'm not sure of that," said my friend.

"But I am," said the surgeon.

"But I've been watching it for months," said the practitioner, "and it hasn't really got any larger that one can be sure about, or any worse."

"I don't attach much importance to histories," said the surgeon; "I am sure he has a sarcoma and that he must have the leg off, and it is my duty to tell him so."

So the consultant explained his opinion to the patient, except as to the period he had still left to live.

Naturally my friend had a most depressing journey home, in fact they hardly spoke a word all the way. The old gentleman would not hear of amputation and asked for advice what to do. "Wait six weeks," advised his doctor, "before you decide on anything."

Six weeks passed, four years passed, the patient remained much the same, although perturbed in mind because, in order to wind up his affairs after the consultation, he had sold out property at a loss of £3,000.

After four years my friend met Mr. S. at a meeting in London, and the consultant, remembering their last encounter, asked, "How long did Mr. X live after we saw him together?"

"He's still alive and a very good patient of mine," replied the doctor.

"Well, I am surprised to hear that," said the consultant. "It must have been a bone cyst." "May be it is," said my man. "*It's a pity you did not think of that at the time.*"

The third story is about a young man of 20, who was admitted to hospital complaining of pain and difficulty with defæcation. The trouble was of short duration, say a week or two. *Per rectum* a hard swelling was felt in one lateral wall posteriorly, reaching almost to the anus.

The diagnosis was thought to lie between syphilis and carcinoma, but the age of the patient and the character of the swelling were somewhat against carcinoma. So the young man was pressed daily with questions—to the third degree—until he confessed to some unnatural vice which was considered sufficient to account for a primary sore in this position. The point impressed on him was, "either you confess or it will be necessary to operate and remove the rectum." As I have already said, he confessed. A few days later the skin near the anus softened and broke, *a cherry-stone was extruded*, and the lesion cleared up rapidly. I forget at which hospital this occurred, but it was in the practice of a most able surgeon, whose opinion I respected just as much after the incident as before. He himself told me, in fact, the final solution of the problem. So we have to remember that chronic inflammatory conditions, such as occur round a foreign body like a cherry stone (or a piece of gauze) may simulate carcinoma or syphilis.

In my collection is a bristle (1½ in. long) which was extruded from a child's foot after it had been treated for many months, and apparently rightly, for tuberculosis.

The last story is the shortest. I saw the case in that department which has been called the "palace of truth" (possibly because of the well-known integrity of its devotees when giving evidence before the courts). A patient was admitted to the London Hospital on the medical side. He was vomiting and acutely ill. He died within a few hours, before an exact diagnosis could be made. At the autopsy the gastric mucosa was intensely congested, with hæmorrhages here and there and areas of partial necrosis. The diagnosis of death from irritant poisoning seemed clear, and those interested

left the post-mortem room. When, however, the autopsy proceeded, with that meticulous care and scientific accuracy for which our pathological department is so justly famous, *the bladder* was found to be *in exactly the same condition as the stomach.* To this day no explanation has been forthcoming. I hazard the opinion that it was a case of acute septic gastritis, and that absorbed organisms excreted by the kidney caused the bladder condition.

Is any moral to be drawn from these stories, for the truth of which I am prepared to answer? Perhaps it is —never be too cocksure of anything in medicine or surgery. But, on the other hand, modesty can be carried too far. I met a "London" man once, who was professionally quite sound, and yet has never succeeded in practice because of his extreme distrust in himself. He would give an opinion in a hesitating way and then add, "But, of course, I'm not quite sure about it; you see I was a medical student for fifteen years because I could not pass my exams." Needless to say, the patient usually sought advice elsewhere the next time there was illness in the household. I suppose the soundest maxim is: *in medio tutissimus ibis.*

CHAPTER X

THE TREATMENT OF TUBERCULOUS GLANDS IN THE NECK

AN old proverb says, " Catch your hare before you cook it," and it is best to be sure that glands are tuberculous before treating them. The following conditions are most likely to cause confusion :—

(1) Enlarged glands due to non-tuberculous infections of the tonsil. The glands draining the tonsillar region situated over the bifurcation of the carotids are very commonly enlarged, especially in children. If these are affected alone, or even with a few others in the immediate vicinity, the condition is *probably* not tuberculous. With acute or subacute inflammation of the tonsils there is sometimes a glandular enlargement all down the neck on one or both sides, and it may even extend to the axillæ. This is a trap for the unwary ; luckily, the enlargement usually subsides with the tonsillar inflammation and the diagnosis becomes clear.

(2) There is often a group of rounded enlarged glands in the upper part of the neck, posteriorly, when adenoids are present. These may appear to have all the characteristics of tuberculous glands and yet disappear in a few months when the adenoids have been removed.

(3) " Pyogenic scrofulosis " is typically found in neglected children with a tendency to sore eyes, scabby faces, dirty heads and discharging ears. There is chronic enlargement of the cervical glands, but it is pyogenic and not tuberculous. Some children living in good surroundings seem susceptible to pyogenic infections and may show pyogenic scrofulosis.

Apart from simple measures, such as cleansing the

mouth and removing pathologically-enlarged tonsils or adenoids, the chief question in the treatment of tuberculous cervical glands is to operate or not to operate. At first sight the problem seems simple : here is a pathological swelling, let us cut down and remove it. This might hold for a foreign body or new growth, but the swelling in this case is due to a bacillus which may be walled in and harmless at the centre of the gland until an operation (especially a clumsy operation) sets it free in the tissues, Moreover, it is generally impossible to remove all the bacilli, there may be some in other glands, or in the periglandular tissues where there has been periadenitis, and apart from dissemination of bacilli in the wound both the injury to lymphatic channels and the necessity of absorbing blood and debris after operation throw much work on neighbouring glands. The very important question of resistance must also be considered, and this factor may fluctuate widely in a tuberculous patient ; operation should obviously be done when the resistance is high and steady.

Few major surgical operations are easier to perform (after a fashion) than the removal of tuberculous cervical glands, but there are few in which care and surgical skill are better repaid.

In considering the difficulties, dangers and results of this operation, I confine myself to complications which have come within my personal experience or knowledge, and do not profess to give an exhaustive account of all possible difficulties. Percentages are valueless, because the operation is undertaken by all and sundry and the results vary widely with the skill of the operator and the time of operation. Moreover, since I probably see more failures than successes, my figures would be biased.

The risks of operation are immediate and remote.

Immediate.—The chief difficulties of the operation and most of its dangers are due to periadenitis. There is often much periadenitis in an apparently easy case. The gland margins are ill-defined, and they adhere to

every structure around. This may lead to: (*a*) The opening of an abscess, flooding the wound with tuberculous material, or to (*b*) division of the spinal accessory nerve, which causes some wasting of muscles and a droop of the shoulders which lady patients do not like. Although on the look-out for this nerve, I have found myself gently snipping it through in the belief that it was a band of fibrous tissue. (If you have a well-known name and a first-class reputation you can sometimes do these things with impunity, but not otherwise.) (*c*) Large veins may be torn, including the internal jugular; this is not a very serious mishap—not so serious as dividing the nerve—and is usually dealt with quite easily. In the following case however, it gave trouble.

Case 1.—A woman of 30 had tuberculous glands high in the neck, reaching upwards behind the parotid. I was asked to assist a colleague who was operating. The usual slow and dreary piecemeal removal was carried out. Time slipped by, the electric fan buzzed, the afternoon was hot, and "theatre stagnation" was settling upon us. Finally there remained only one gland, the size of a large hazel nut, close to the base of the skull. My friend pulled it this way and that, he snipped at it this way and that, but it remained obstinately *in situ* and looked not a whit the worse for all his attacks.

"Let's leave it," said my friend with a sigh.

"Pity not to have it out after worrying it so long," said I. Fatal remark.

"Perhaps you're right," said my friend, and slipping a pair of blunt-pointed scissors, curved on the flat, beneath it from above, he levered it outwards, using the skull close to the mastoid process as a fulcrum. The gland came away, there was a great gush of blood and we realized that the internal jugular was torn close to the base of the skull, a most inaccessible position. Luckily we were callous enough not to be too agitated, but some rather feverish moments followed, at the end of which the bleeding from above was stopped by a ligature passed deeply round all the neighbouring structures. The internal carotid, the vagus, hypoglossal and glosso-pharyngeal nerves were all included. Whether we included the sympathetic trunk we did not know, but the bleeding stopped. The ligature was left long and removed, under ether, a few days later. The

patient had great difficulty in swallowing afterwards (which she attributed to the anæsthetic), and there was partial paralysis of the palate, pharynx, fauces and tongue. A month later the paralysis was distinctly less, and when I last heard of her she was working without complaint as a housemaid.

Remote Complications and After-results.

Sepsis after operation is negligible. The neck is well supplied with blood, and it is sometimes amazing how much uncleanly and unskilful mauling it will tolerate without resentment. (*a*) One of the commonest after-results is what is usually called *recurrence after operation*. Within a few months after glands have been removed others in the same neighbourhood, or elsewhere in the neck, are found to be enlarged. I believe a more correct description of this would be *extension caused by* operation. Bacilli have been sown in the wound and have found their way to other glands, or the resistance of other glands has been lowered by injury, allowing the bacilli which lurked within them to grow. (*b*) In some cases the extension is not confined to the neck, but may involve other structures, such as the lungs or joints.

Case 2.—A man aged 22 was seen in July, 1915. A swelling had been noticed in the neck twelve months previously, and had softened later. After six months a "scraping" operation had been performed and the neck had discharged ever since. Other glands had also enlarged, broken down and discharged spontaneously, or had been "lanced." Two months ago, while at work, the patient had brought up a few mouthfuls of blood and had not worked since.

There were scarring and some small sinuses on the left side of the neck, mainly in the submaxillary region; physical signs in the chest suggested pulmonary tuberculosis. The patient was sent to a sanatorium for ten months, the sinuses all healed in six weeks and he remained well, working regularly. Some years later there were still physical signs in the chest, but the neck remained firmly healed and the glandular enlargement was barely noticeable. It seems probable that both the further glandular involvement and the pulmonary disease were directly due to the "scraping" operation.

Case 3.—A boy aged 17 had enlarged cervical glands at 6 years of age which broke down and were opened at 8 years, but swelling persisted. Towards the end of December, 1916, the swelling was removed by operation, after which his health failed and he lacked energy. On February 1, 1918, the patient began to have hæmoptyses, sometimes as much as half a pint. On September 5, 1918, he died of pulmonary tuberculosis. The operation had successfully removed the diseased glands, for only scars remained.

Case 4.—A girl of 10 had an abscess under the chin which cleared up in a few weeks. When she was 17, glandular swellings appeared in the neck, and were removed in hospital. Three or four months later other and more numerous swellings appeared, and an extensive operation was undertaken for their removal. The patient was very ill after this, and when I saw her in June, 1918, there were extensive signs of pulmonary tuberculosis with cavitation, and also symptoms of tuberculous enteritis. On the left side of the neck a rather wide scar extended from 1 in. behind the lobule of the left ear to 1 in. to the right of the symphysis menti. The scar passed just under the horizontal ramus of the mandible, to which it was adherent about the middle. Another scar, about 2 in. shorter, crossed the whole left side of the neck parallel with the first but 1 in. lower down, and there was also a scar 3 in. long following the posterior border of the left sterno-mastoid. On the right side a scar reached from the angle of the mandible to the mid-line of the neck. Enlarged glands were to be felt on both sides, especially posteriorly on the right. The left trapezius was paralysed and the tongue was tied down by scar tissue, so that it could only just be protruded at the right angle of the mouth. The total length of the incisions was about 23 in., evidencing, in transatlantic phraseology, "some" operation. There is no reasonable doubt that the surgeon had done his best to remove this patient's glands, but I suspect that a careful examination at the time of the second operation would have revealed chest trouble. Certainly symptoms were already present. The operator fell into an error that is all too common; he strained at a gnat (the glands) and swallowed a camel (tuberculosis elsewhere).

(*c*) Cases of operation for glandular tuberculosis followed by death from general tuberculosis.

Case 5.—A woman, aged 25, to all appearances healthy, was operated on early in 1912 for tuberculous cervical adenitis of moderate extent. The neck healed well, but an irregular pyrexia developed and she died of general tuberculosis about six weeks later.

Case 6.—A woman, aged 24, nearly went the same way but rallied and finally recovered. She noticed a swelling on the left side of the neck about February, 1914, and on June 1, 1914, a group of tuberculous glands in the upper part of the left neck was removed. The wound healed well but within a week of operation the patient began to have evening pyrexia and looked pale and ill when I saw her at the end of June. There were several newly-enlarged glands in the lower part of the neck on the left side, the temperature ranged from 99° to 101° F., and the pulse-rate was 122. Physical signs in the chest developed, the pyrexia continued, rapid wasting set in, and death seemed extremely probable. Gradually, however, she improved, and was about again six months later, almost restored to health. Luckily, she developed resistance and fought her acute tuberculosis successfully.

Non-Operative Treatment.

(1) General and hygienic treatment includes a quiet, worry-free life, with plenty of nourishing food, rest and fresh air. This line of treatment is not always useless. I once saw a servant girl, aged 17, who returned to her home in Devonshire with two sinuses on the left side of the neck, several enlarged glands, and one matted mass the size of a hen's egg. She stayed at home and helped her mother, remaining under occasional observation. Twelve months later her neck was practically normal.

(2) Sanatorium treatment is in my experience more successful in glandular than in lung cases, and they are not so prone to relapse. It is true that cervical glands can be felt and the improvement estimated directly, whereas in pulmonary tuberculosis a patient who assimilates well may be fattened out of recognition and discharged much better in appearance, with the lung condition perhaps unaffected.

(3) A colleague who uses the method informs me that keeping the neck at rest, as with wool and bandage or a poroplastic collar, is often a most successful treatment for tuberculous adenitis; sinuses rapidly heal and glands subside. I have seen one case in which restriction of neck movements by wool and a bandage seemed to cause great improvement in a few weeks.

(4) Tuberculin sometimes seems to succeed, sometimes not, and sometimes glands improve steadily and then suddenly relapse without any obvious reason. In successful cases I often think that ordinary hygienic treatment might have cured the glands as quickly, and perhaps more permanently. Some experts use one variety of tuberculin and others another, and their methods of dosage also vary widely. As their results do not vary as widely as their methods it seems a fair conclusion that the variety of tuberculin used is not of vital importance, nor is the exact system of dosage—provided always it is a safe one and administered by some one with experience. Perhaps the action of tuberculin is due to some non-specific substance contained in it.

(5) X-ray treatment may accelerate the cure of tuberculous glands. In adenitis plus cutaneous tuberculosis, I have seen a good result, but in several uncomplicated cases the rays seemed valueless.

(6) Among drugs, syrup of the iodide of iron, Wander's malt and iron, and syrupus iodotannicus, are the most often used. The first two may have a favourable influence on the general health, but I could never attribute to them any certain effect on the glands.

Conclusions.

(1) The first and most important line of treatment for tuberculous glands, as indeed for all forms of tuberculosis, is prevention, i.e., complete or partial isolation of all infective cases of tuberculosis in human beings, and (distinctly less important) adequate protection of children from milk infection.

(2) In every case of tuberculosis of the cervical glands attention should first be given to all possible sources of sepsis (or local tuberculous foci), such as decayed teeth, a septic mouth and enlarged tonsils or adenoids. Further procedure depends on the condition of the patient and of the glands, and on the skill of the operator available.

(3) Granted a skilled operator, localized tuberculosis of glands on one side only is suitable for operation. But operation should always be preceded and followed by efforts to raise the patient's resistance to the highest possible level by treatment at a sanatorium or convalescent home, or by hygienic measures at home. It is also important that operations should be accompanied by an inspection of the home the patient is to live in. A very obvious source of infection may be found there which will prejudice success; a little supervision may improve the surroundings. This is where the tuberculosis officer comes in. If these methods are followed, operation is far the quickest and most successful line of treatment for tuberculous glands.

(4) In cases unsuited for operation, or in recurrences after a careful operation, sanatorium and prolonged hygienic treatment should be tried, combined sometimes with rest to the neck.

(5) If sanatorium treatment fails, then tuberculin may be tried.

(6) Abscess formation is dealt with by aspiration or incision with a tenotomy knife. A good treatment for a tuberculous abscess, even a large one, is to make a small opening under an anæsthetic, let the contents escape, then inject the cavity three times with tincture of iodine, letting the fluid run out again each time, and afterwards closing the opening. I think this is more effective than iodoform emulsion. For a sinus, with or without a surrounding area of diseased skin, I generally suggest painting with green spirit solution (1 per cent. perchloride of mercury, 1 per cent. brilliant green). I am not quite sure of its value, or to which ingredient the value is due.

(7) Perhaps the reader may feel that all these lines of treatment are not as satisfactory or rapid as might be wished, but the prospects of further improvements are brighter now than they have ever been. Failing a specific treatment, the problem is to increase the patient's resistance. Nature does it repeatedly; many a patient almost suddenly, and without any obvious reason, develops resistance, and in time we shall be able to do it. Much is to be hoped from the new spirit of teaching in the medical schools. The day of teaching by aphorism ("herpes labialis is the outward and visible sign of a catarrh") has passed. It also looks as if teaching by dogma (three varieties of varicocele, four sorts of fractured femur, five treatments for stricture) will now soon be modified, and the student, no longer spoon-fed, will be stimulated to teach himself in a spirit of healthy scepticism, accepting nothing without adequate reason for the belief. A generation of this and we may see tuberculosis no commoner than enteric fever or cerebro-spinal meningitis.

CHAPTER XI

HYDROA GESTATIONIS

So little is known of the pathology, ætiology, or relationships of this remarkable disease that the following case is worthy of record:—

An octigravida, aged 26, came to see me in December, 1908; at that time she was five months pregnant. She complained of an eruption on both legs which she had noticed for about two days, and which was causing great suffering and loss of sleep from intolerable and continuous sensations of itching, burning, and tingling. She had had the eruption several times before, each time during pregnancy, and she told me that it usually took ten weeks to cure. First a red and raised patch would appear, always in the same place and on both legs; then "water" would form over it in blisters. These would join up to one large blister and then burst, after which the whole area would become yellow and offensive, and the patient would be confined to the house for several weeks more until healing took place. There was no other complaint, and the appetite always remained good throughout pregnancy in spite of suffering and sleeplessness. She was a somewhat stout but healthy young woman of florid complexion. Her tongue was clean, and nothing abnormal was to be detected, except the eruption on the legs. On each leg, starting about four inches below the tubercle of the tibia and reaching downwards for another four inches, there was a band of reddened skin round the limb. The eruption was roughly symmetrical on the two sides, but whereas on the left side the leg was encircled except for an area of normal skin one inch across, on the right side the band did not cover much more than half the circumference. The reddened skin was hot, tense and raised considerably above the level of the surrounding skin. The surface and colour were uniform. The margin of the band was irregular but well defined, and there were some outlying islands of eruption; the upper margin was

more regular in outline than the lower. The affected area was not especially tender to touch, but manipulation increased the irritation. The leg was dressed with unguentum zinci benzoatis spread on lint, which was secured in position with a bandage and renewed daily. Small blisters appeared over the surface of the eruption and later joined together, and in three or four days there was a single bleb of fluid on either leg. This was snipped with scissors in the usual way and kept clean, and in fourteen days the skin appeared normal again. On February 26, 1909, there were numerous marks of scratching over the affected area and some reddened and hard patches, apparently due to a septic infection of the scratches. The patient told me that there had been no return of the eruption, but that the patch of skin on the leg where it had appeared still remained irritable. The pregnancy continued normally.

The previous history of this patient, which was fully investigated to throw light on the eruption, was as follows. During a married life of six years and nine months she had had eight children and one miscarriage; there had been trouble with the legs during each pregnancy, including that which miscarried. The patient was married in March, 1902, when already seven months pregnant; the eruption had then been troubling her for three months, starting just before Christmas, 1901. In May, 1902, she gave birth to a male child. In August, 1903, the patient gave birth to twins, female children; from the sixth to the seventh month of pregnancy the eruption began to trouble her. In 1904, again while six to seven months pregnant, trouble began with the legs, and twin male children were born in August, 1904. A female child was born in August, 1905, and this time the legs were troublesome rather earlier in pregnancy. The miscarriage occurred in 1906, but the patient did not remember how far the pregnancy had proceeded, only that she had had a rash on the legs as usual. In 1907 a male child was born, and on this occasion the woman thought she had escaped the eruption; it attacked her, however, after labour and ran the usual course. In 1908, when pregnant for the seventh time, the eruption first occurred at the fourth month and duly cleared up, only to reappear in the later months of pregnancy. This history may be tabulated, see next page.

The family history showed no case of a similar disease in any member of the family, and there were no other diseases. The patient was one of twelve, all brought up in rather hard circumstances but all living.

Number of pregnancy	Period of onset of hydroa	Date of birth	Sex of child
1	Four months	1902	Male
2	Six to seven months..	1903	Female twins
3	Six to seven months..	1904	Male twins
4	Five months	1905	Female
5	Four months	1906	Miscarriage
6	Puerperium	1907	Male
7	Fourth month, relapse at the eighth month	1908	Female
8	Fifth month	Still pregnant[1]	

[1] A relapse occurred in the ninth month of this pregnancy, but the condition improved in fourteen days. A healthy male child was born at full term.

This appears to be a clear example of the so-called erythemato-bullous type of hydroa gestationis, but there are nevertheless a few remarkable features.

(1) The toxins of pregnancy had in this case quite an exceptional opportunity to produce their effects, as the pregnancies succeeded one another so rapidly, yet the initial eruption, early in the first pregnancy, was as severe as in the eighth.

(2) The curious localization of the eruption in a band round the limbs, and its recurrence in this position, are of interest. The distribution calls to mind the areas of "stocking" anæsthesia met with in hysteria.

(3) The statement that the eruption showed a tendency to break out late in December each year is noteworthy. The reason why psoriasis and certain other skin diseases reappear especially at certain times of the year is not yet explained.

(4) A study of this case leaves feelings of dissatisfaction with our present method of classifying skin diseases. The eruption had first the appearance of a giant urticaria, then of dermatitis herpetiformis, then of pemphigus. There seem to be all intermediate grades, from urticaria and erythema on the one hand to herpetic and bullous

eruptions and purpura on the other. A toxin which causes urticaria in one person may cause pemphigus in another, the eruption depending perhaps more on the patient than on the nature of the toxins. Some people blister more readily than others, and some bleed more readily ; the condition known as epidermolysis bullosa is only an exaggeration of the first type.

Sequel.

A ninth pregnancy was accompanied by another attack of hydroa.

In the railway strike of 1911 the crowd got out of hand and stoned the military guarding the railway. The Riot Act was read and six shots were fired, two men being killed and three wounded—one shot through the mouth. More rioting and looting of shops followed, and late in the evening the goods-sheds were attacked and fired until the whole sky glowed with the blaze ; in all ninety-eight loaded trucks were robbed and destroyed. A personal friend, the local Territorial adjutant, who was with troops guarding the main station, was asked to scout. The stationmaster took him by the arm, saying : " Don't go ; two of those trucks contain explosives." Within two minutes came a flash and a roar; the howling of the mob suddenly ceased and a chorus of screams and groans arose. Six men and women were killed outright and thirty-two injured, some desperately—among these, alas, my poor patient. Twice she had filled a perambulator with loot and returned home and had gone a third time to the sheds. She was stooping when the explosion occurred and half her face was blown away—nose and both eyes destroyed. For forty-eight hours she survived in hospital, asking all the time for her doctor. I was in Germany at the time exploring the Hartz Mountains and did not hear of this event until my return.

CHAPTER XII

RAYNAUD'S DISEASE AND ACROASPHYXIA

MANY of those attending the out-patient departments of any hospital suffer from "poor peripheral circulation." In the milder forms of the condition hands, feet, noses or ears tend to be colder than normal, and blue, red or pale in colour. Sometimes the fingers are thickened and stumpy, sometimes they are tapering, with the skin tending to peel. The nails are often rather atrophic, and there may be scars on fingers, toes or ears, due to some superficial loss of substance. There is considerable individual difference in the reaction of the body to cold, and any brief spell of cold weather brings this out. There are patients, however, whose fingers remain cold and blue all the year round, and others who are liable to sudden arrest of circulation, which may proceed to gangrene in one or several digits. This last type was first described by Raynaud. I once investigated thirty-one cases of inadequate circulation, mostly of the Raynaud type. Records of twenty-one cases of Raynaud's disease were obtained from the London Hospital, and another 110 cases were gleaned from the literature. Sir Clifford Allbutt's criticism of my paper might be summarized as: "One cannot see the wood for the trees."

Some of the conclusions and a few cases are here narrated.

It seems clear that any condition such as unhealthy environment or an attack of fever, tending to lower the nutrition of a patient or to affect his general health, will make him susceptible to cold and may give rise to acroasphyxia; there are also certain local causes.

General Causes.

(1) Slum life.

(2) Tuberculosis, a common accompaniment of acroasphyxia in the out-patient rooms. French writers have declared that acroasphyxia in all its forms, as well as Raynaud's disease, is caused by a tuberculous toxæmia; this seems too sweeping.

(3) Adenoids and the "lymphatic diathesis" generally.

(4) Alcoholism and other forms of poisoning, including uræmia. A case of Stewart's developed Raynaud's disease immediately after an attack of intestinal obstruction. Raynaud and others have recorded diabetic cases.

(5) Acute fevers. Cases following measles, typhus fever, typhoid, rheumatic fever, bronchitis and alveolar abscess have been described respectively by Myers, Rakhmanoff, Raynaud, Cafary, Moursou and Landry.

(6) In syphilitic and malarial subjects acroasphyxia is common (Abercrombie).

(7) Nervous instability and nervous disorders generally, e.g., dementia, melancholia, mania, epilepsy, hysteria, hemiplegia, hydrocephalus, paralysis agitans, cerebral tumour, tabes and chorea.

(8) Gastric disturbances (Raynaud).

(9) Vascular lesions. Stewart says that 12 per cent. of patients with Raynaud's disease show some vascular lesion.

(10) Menstrual disturbances. Many of Raynaud's cases occurred on cessation of menstruation.

(11) Heredity and individual predisposition. In epidemics of ergot poisoning, individuals and sometimes families are picked out, while others who take quite as much poison escape unhurt.

(12) Destruction of red blood corpuscles with hæmoglobinuria.

(13) Certain skin diseases, e.g., lupus erythematosus, frequently; also lupus vulgaris, dermatitis herpetiformis, and urticaria.

Local Causes.

(1) A blow may cause unilateral local asyphyxia. Lamotte reports the case of a billiard marker who received a blow on the outer side of the right arm. There was great pain, and the hand became cold and pale and insensitive to lancet stabs. The arm began to improve in ten days and ultimately recovered completely.

(2) Peripheral neuritis. Pitres and Vaillard believe that all cases of Raynaud's disease are due to neuritis. Affleck mentions a case of local asphyxia due to neuritis. Judson Bury found post-mortem changes in the nerves in three out of five cases. He thought neuritis might be secondary to the local anæmia, but suggested the possibility of a vasomotor neuritis.

(3) Local arterial changes, e.g., endarteritis obliterans and arterio-sclerosis, give rise to local blueness, coldness and even gangrene.

(4) Congenital narrowing of the arteries or arterioles may occur. An artery of small size or with a thickened intima might diminish the blood supply on contraction sooner than would a normal vessel.

The basis of Raynaud's phenomena appears to be a vasomotor neurosis, but it is doubtful what constitutes Raynaud's disease. Some writers rigidly exclude cases which another writer regards as the only genuine ones. All cases, for instance, are declared by one author to be secondary to malaria; others say that malarial cases are not true Raynaud's disease and must be excluded. Others limit the disease to patients with gangrene. It is recognized by the symptoms and not by its causes or results.

Hæmoglobinuria seems to be a fairly common accompaniment of Raynaud's disease. Indeed Boas, in his paper on paroxysmal hæmoglobinuria, cites cases which might equally well have served as examples of Raynaud's disease. Of 110 recorded cases of Raynaud's disease, seventeen were complicated by hæmoglobinuria, but in some others there is no account of the urine. Whether

the condition of the nervous system causes the hæmoglobinuria as well as the Raynaud's phenomena, or whether the breaking-up of corpuscles causes both the Raynaud's phenomena and hæmoglobinuria, is not yet determined. Boas collected blood just before the onset of coldness of the extremities and general symptoms, and found that the corpuscles did not form rouleaux and soon became crenated. He also induced attacks of hæmoglobinuria experimentally on several occasions, by immersing a patient's hands in cold water. He observed that the change was purely local and apparently due to excessive vulnerability of the corpuscles, the hæmoglobinuria being only a matter of excretion.

He passed electric currents through portions of the patient's blood and through his own blood, and again showed an instability of the patient's red blood corpuscles. He attributes the symptoms preceding and accompanying hæmoglobinuria to a temporary uræmia, due to clogging of the kidney with broken-down blood; the hæmoglobin at the same time prevents the excretion of normal urinary products. The malarial parasite seems to cause, if not actual breaking up of the corpuscles, at any rate increased vulnerability, for under special conditions, such as chill, or the administration of certain drugs, blackwater fever may occur. Perhaps the action of broken-down blood-cells makes the vasomotor centre in the medulla irritable. If this be so, the vulnerability of the red cells accounts for the large numbers of typical Raynaud's cases with hæmoglobinuria.

Erythromelalgia, the reverse condition to Raynaud's disease, is very nearly related to it, and in some cases flushing of the part alternates with coldness. That interesting and insufficiently investigated disease, scleroderma, may also be accompanied by Raynaud's phenomena, and the thickening and stiffening of the skin seen at the ends of the fingers in Raynaud's disease resembles scleroderma. End-joint arthritis and symmetrical arthritis of the fingers is also allied. (Wardrop Griffith).

Sensory symptoms may be the most marked of all in patients with Raynaud's disease, and there are all stages between this and pure acroparæsthesia. Cafary has described a case where symmetrical congestive mottling of the skin occurred on exposure to cold. Leloir records three cases where hyperidrosis of the fingers occurred on exposure, even when the hands were plunged into cold water.

Hahnemann has recorded the interesting case of a woman who had indigestion and suffered from coldness of the nose. The cold came on at fixed times, affecting now the right and now the left nostril. When this happened at night she could not sleep and was afraid she would go mad.

Some Cases.

Case 1.—A stationary-engine driver, aged 35, was admitted for nervous symptoms and gangrene of the ears. During the last five years he had had ulcers on several parts of his body. Two years previously he had suffered from numbness of the left side of the face. He had contracted syphilis eight years before admission. He seemed comfortable and well nourished; both ears showed a brownish, dry, gangrenous patch. The hands were cold, but not markedly so. There were symmetrical scars on the spine of each scapula and others lower down the back; the scar of an old syphilitic ulcer was seen on the right thigh.

Case 2.—A boy aged 14 was admitted to hospital with gangrene of the feet. He had suffered from cold toes until 9 years of age, when on the advice of a doctor he began to wear two pairs of socks all the year round. All went well until he was sent from a hosier's shop to a reformatory for stealing. He was there three weeks, and after a week at the Union went to a training ship, where next day he began to swab the decks barefooted. It was September 2 and the weather was warm. His feet "went cold" and pained him as soon as they touched the water. At 6.45 a.m. he noticed that his feet were "blue in colour, with white blisters." When the swabbing was over he was unable to walk and was carried to the doctor. The blisters were pricked and the feet put in warm water "as hot as I could bear it, it turned my toes all black." The patient then went to bed, and remained there until admission. The toes

had been fomented with "red boric lint"; "pulling off the lint pulled off bits of skin." He seemed bright and happy and very intelligent. There was an ulcer on the left heel, left by superficial gangrene. The left little toe was represented by an ulcerated stump. The distal phalanx of the second toe had separated, and there was some gangrene of the fourth and fifth. His pulses were normal, and his feet warm. He recovered.

Case 3.—A shunter, aged 55, suffered on December 23 from numbness in the right middle finger, which went black when put into salt and vinegar and water. Next morning two or three more fingers had become black, but improved later in the day. On Christmas morning he picked up a cold hook, and all the fingers went black and numb. He had suffered from attacks of numbness and itching in the fingers for thirty years, and from chilblains as a child. Gangrene of the fingers of both hands developed in hospital, and on January 27, partial amputation of the index, little, middle and ring fingers of the right and of the whole of the left middle and part of the left index finger was performed.

Case 4.—A female child, aged 9 months, was well until one day she suddenly screamed when lifted. The mother, suspecting an unguarded pin, removed the child's clothes and found the left foot black and swollen. The right foot was also somewhat swollen and discoloured. This lasted eight hours, and the swelling remained when the dark colour disappeared. Another attack followed, accompanied by vomiting. Next morning there was a third attack affecting the hands, but no gangrene supervened during the period of observation.

The following cases occurred in three brothers; in each case the disease caused gangrene.

Case 5.—A boy aged 8, was quite well at birth. At 4 years of age he began to suffer from severe chilblains on all the extremities. This recurred every winter, during the last two of which the patient had lost portions of his fingers. The ears also were tender every year. When seen he was sitting up and felt well. The ears showed cicatrices. The fingers of the right hand were swollen, red and cracked. The little finger was half the normal length, and had a small shrivelled nail. The nails of the third and fourth fingers were also small, but the thumb was practically normal. A radiogram showed, in the little finger, the first phalanx and remnant of a second, in the

middle fingers alteration of the terminal phalanx. On the left hand the fourth and fifth digits were half the normal length. There was a small shrivelled nail on the little finger, none on the fourth. On the base of the terminal phalanx of the little finger only a vestige remained, while one-and-a-half phalanges were missing from the ring finger.

The toes were small and blue, with skin dry and cracked. A nail was missing from the fourth toe of the right foot,

The circulatory, urinary, respiratory and nervous systems were normal.

Case 6.—His brother, aged 16, had a similar "bad finger," and a toe was amputated after being affected in the same way for two years.

Case 7.—The third brother, aged 13, had had trouble with the fingers, toes, and the inner side of the feet and ears for three winters. The fingers showed many scars.

Raynaud's Disease with Hæmoglobinuria.

Case 8.—A brewer's labourer, was first admitted to hospital for Raynaud's disease. In January he began to be troubled with pain and burning in the upper edge of the right pinna, and after a day or two a black spot appeared. The left ear became affected later. The right ear improved in a few weeks, but the left grew worse. There was also coldness and numbness of the hands and of the right foot. When admitted the patient was in good condition. There was a hard, dry, black patch on the upper part of the left pinna. The hands and right foot were numb, and a burning pain like "the hot ache after handling snow" was felt on exposure to warmth.

Reddish urine, "almost like blood," was passed when the coldness began, and recurred at intervals for a week or twelve days. While in hospital albumin was passed, and the amount increased after immersion of the arms in cold water for fifteen minutes; there was, however, no hæmoglobinuria.

Two years later the patient was again in hospital. This time there was a small necrotic patch on the helix of each ear, and considerable loss of substance on the left side, The feet were occasionally affected so badly that he could not stand, The urine was black after each attack, and in the out-patient department it contained blood, but in the wards albumin only was found.

A year later the patient was again in hospital for the same

complaint; there was also sharp pain in the left side on inspiration.

During the following year the patient, now aged 32, was admitted as a case of tuberculous testis and hæmoglobinuria. On this occasion hæmoglobinuria was artificially produced by immersion of the hands in cold water.

Case 9.—A porter, aged 27, had found three years previously that in cold weather his ears became blue, and then black, and each winter since then he had lost pieces of his ears. The first urine passed on rising was normal, but as soon as he left the house on a cold day, winter or summer, the urine became black, and the hands, legs and ears became cold and numb. He had contracted syphilis six years before admission.

While in hospital on the first occasion the fingers and toes were not cyanosed and there were no symptoms except a hectic temperature, but there had been much loss of substance of both ears. Later in the year, he was re-admitted for hæmoglobinuria and pains in the limbs. The ears this time were merely cold and blue. The spleen was palpable, but no other abnormality was noticed.

Case 10.—A wood turner, aged 19, had Raynaud's symptoms alternating with erythromelalgia.

Every winter for eight years his fingers had become white and bloodless, with throbbing and tingling sensations, and remained so until he applied warmth, generally hot water. The attacks occurred only in the cold months, or after exposure to cold. In summer the toes became very hot, without sweating, and when walking along the pavement he felt as if he were walking on very hot stones.

Two years before admission, the end of the right index finger "broke down" after being very white, and he was told that the bone in the finger was dead. The nail of the left great toe became black and was shed, and the second toes of both feet were affected.

Inspection showed a large ulcer on the inner side of the plantar surface of the terminal phalanx of the right great toe. The last phalanges of the first finger of the right hand were atrophic and the joint stiff. Further examination revealed nothing of interest. With simple antiseptic treatment the ulcer healed.

This paper was presented as an M.B. thesis: it represents months of delving in various languages at most of the

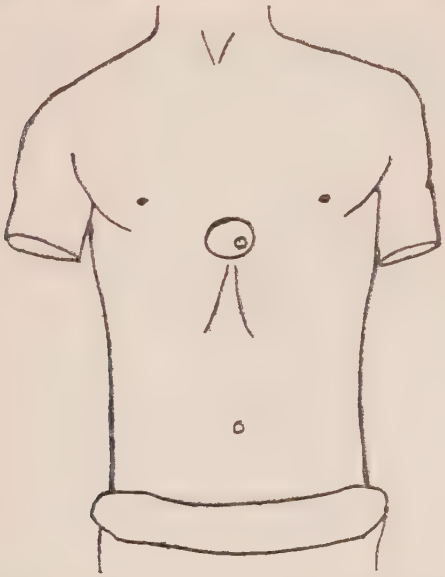
medical libraries in London. It exhibits the complexities of the subject but provides no royal road to their understanding. One can only hope that the trail thus blazed will save trouble for others. For all these peripheral circulatory disorders I prefer the name acroasphyxia, which would include Raynaud's disease. The attachment of some worker's name to a disease is a worthy honour and has historical value, but may none the less concentrate too much attention on one aspect of the trouble. Addison's disease should be brought into line with other forms of suprarenal deficiency, and hyperthyroidism is a better term than Graves' or Basedow's disease.

CHAPTER XIII

SOME CUTANEOUS CURIOSITIES

I.—Rudimentary Marsupial Pouch in Man.

On August 23, 1912, a curious congenital anomaly was noted in a boy who was being examined for admission into a local works. Except for an error of refraction



(astigmatism about + 3 D.), he was healthy and well-developed; the deformity recorded had been present since birth, and had never caused any trouble or inconvenience.

In the mid-line over the lower part of the gladiolus sterni there was a circular pocket of skin, entered by a small opening a little to the left and below the centre of the pocket. The diameter of the pocket was an inch and a half, and the opening measured one-quarter by one-eighth of an inch. The inside was quite smooth and lined by normal skin. Hair-follicles and sweat-glands were found alike in the lining and overlying skin; there were no signs of scar-tissue or traces of old inflammation or injury around or inside the pocket.

The diagram shows the position of the pocket on the body; its size is somewhat exaggerated for diagrammatic purposes.

I have never before seen such a condition, nor can I find a description of one, and can only suggest that it is a rudimentary marsupial pouch. The suggestion may seem far-fetched, but the pocket occupied just the position of the marsupial pouch in kangaroos.

II.—Morbilliform Nævus with Hemihypertrophy.

While examining a pregnant woman, aged 25, who complained of sickness, I found a blotchy mottling of the skin, which had been present since birth, and of which she was somewhat ashamed. The mottling was bluish-red, disappeared on pressure, and looked exactly like a moderately profuse measles rash. The distribution is shown on the accompanying diagram. It covered the right side of the trunk from one inch below the umbilicus to the base of the neck, and was, roughly speaking, limited by the mid-line of the body, back and front, except just above the left nipple, and over a corresponding area at the back. It also extended down the outer side of the right arm as far as the elbow. A strip went down the outer side of the left arm and covered the greater part of the left forearm, including the dorsum of the hand and the thenar eminence in front. There were islands of mottling on the neck and in the left axilla, but the lower extremities were free.

The woman was generally well-developed, but the right arm was longer and stronger than the left; from the tip of the acromion to the end of the middle finger, the right arm held horizontally forward, measured $31\frac{1}{2}$ in.; the left arm measured $30\frac{1}{8}$ in. The right forearm and calf were each 1 in. more in circumference than the left limbs at corresponding levels. The thorax, just

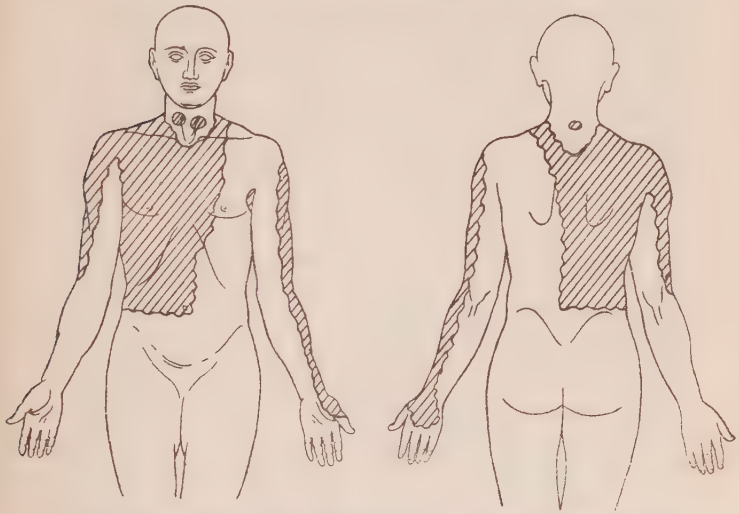


Diagram illustrating the distribution of mottling. The shaded area is the part affected.

above the breasts from mid-sternal to mid-dorsal line, measured, on the right side, $15\frac{3}{4}$ in., on the left 15 in. The legs were of equal length. All the teeth were false. In the lower jaw the patient had cut only the canine teeth of the first dentition; in the upper jaw there had been "a few" teeth of the first set, and eleven second teeth which had soon decayed.

I was informed that this patient, as a baby, was very

blue for a year or two, after which her colour became normal. Two of her sisters had defective teeth, and the child of one of these had a spina bifida; the patient's own first child was "mottled like herself," she tells me, but survived only nine weeks.

I can find no record of a similar condition, but *morbilliform nævus* best describes it. The hemihypertrophy on the side of the nævus is interesting. Possibly there was a local difference in vasomotor control leading to a larger blood supply to the muscles and bones of the right side as well as to the skin. The record that the patient was a "blue baby" suggests the possibility of a congenital heart defect which may have been rectified in the course of further development. No cardiac abnormality was detected when she was seen, and there were no cardiac symptoms.

III.—Multiple Pigmented Warts in Pregnancy.

A healthy brunette, aged 32, became pregnant for the first time about nine years ago. In the latter months of pregnancy crops of pigmented warts appeared on the body, neck and limbs and caused her much annoyance. When the pregnancy was over a few of them dropped off, but the majority remained.

Four years ago she became pregnant again, and after five months fresh crops of pigmented warts began to appear. I saw her at this time and found a number of firm, flat-topped, black elevations scattered over the body and limbs, most thickly distributed on the neck and absent from the face and hands. In size they varied from a pin's head to a large pea, and in shape they were oval or round.

After the child was born the warts remained. I could give but little hope of a cure by medical means, so the patient consulted a quack, who, with an ingenuity greater than mine, ordered her his corn cure. This was salicylic collodion, and some of the growths were shed under the treatment, while others became less pigmented;

most, however, were unaffected when the patient was last seen three years later.

Kaposi, at the Berlin Congress, described a case in which a pigmented mole became black during pregnancy. In my patient the growths were new and appeared black from the first. If she ever comes for treatment again I shall try the effect of small doses of X-ray.

IV.—Circular Ulcer of Leg caused by the Administration of Bromides.

On September 19, 1913, I saw a boy, aged 7, who had suffered from epilepsy since the age of 2½. In spite of different treatments by many physicians he still averaged more than one fit each day and another at night. The only history of other illness was "kidney trouble," lasting a few days, on two occasions during the preceding nine months. He was said to have passed blood with the urine once or twice during these illnesses, and there had been some frequency of micturition but no vomiting. His father, mother, sister and only sister, were healthy. His mother had not lost any children nor had any miscarriages.

The child appeared to be in a condition of semi-idiocy and could not walk or stand, but no other abnormality was detected.

I prescribed :—

Potassium bromide	gr. iiss
Urotropine	gr. v
Borax	gr. iij
Extract of liquorice	♏ x
Syrup	♏ xv

to be taken every four hours at first, and later three times a day.

He remained without fits from September 19 to October 5; the mental condition improved enormously; he ran about and talked normally, although he was not as bright as other children of the same age. Fits then

began again, mainly at night, so, in addition to the day medicine, I prescribed :—

Tinct. opii	.. ..	♏ iij
Potassium and amm. bromides together	..	gr. xijj

to be taken at bedtime.

Just before Christmas, 1913, a small, raised red area, with one or two crusted suppurating points, appeared over the right shin and was poulticed by the mother; but before I had time to deal with this seemingly trivial condition I was taken ill myself, and did not see the child again until May 20, 1914. During my absence the mother refused to allow the child to see any other doctor and continued steadily to give the day and night mixtures, which she thought controlled the fits rather better than other remedies she had tried. On May 20 I found the leg in the condition shown in the photograph. A shallow, circular ulcer, passing right round the limb, extended from about 1 in. above the base of the malleolus of the right leg upwards for nearly 4 in. The margin was a little reddened and raised; and points of pus were to be seen here and there. The surface of the ulcer freely oozed a thin, straw-coloured exudate. In the centre there was some tendency to heal, and the few small healed areas consisted partly of skin and partly of scar-tissue. On the inner side of the right arm there was a raised red circular patch about the size of a shilling with a central scab. The skin over the rest of the body was normal in every way.

The dose of bromide was not too small to cause a bromide rash, but there was no sign of any eruption about the face or elsewhere. I therefore decided to investigate the matter further. The medicine was continued and palliative local treatment adopted, while the patient was sent to see a colleague who made a speciality of skin diseases. He thought, on the whole, that the lesion might be due to a fungus, although he failed to find anything recognizable in a scraping from the edge. He suggested that the compound benzoic and

Right leg seen from the outer side. The projections on the under surface are due to collecting droplets of exudation.

salicylic acid ointment should be applied to a portion of the edge and the effect noted. The result was a rather rapid extension of the ulcer over the area where the ointment had been applied. The next step was to test the possibility of syphilis by adding 5 gr. of iodide of potash to each dose of medicine. A Wassermann test was not done, because if blood had been drawn I should certainly never have seen the boy again. He was very nervous and needed much tact, and so did his mother. The result of iodide treatment was also negative. Next the hexamine was omitted, but that made no difference. Finally the bromides were stopped and the result was most marked; within a week or two the ulcer had almost completely disappeared.

The leg condition as seen in December, 1913, and the arm condition, of May, 1914, give a clue to the original lesion and brings the case into line with the so-called "condylomaform" bromide eruption, which occasionally ulcerates and may cover an area several square inches in extent. The lower part of the leg is one of the favourite sites for this eruption, as indeed it is for most kinds of ulceration,

V.—Chrysarobin as a Cause of Psoriasis.

A gentleman, aged 38, had suffered intermittently from psoriasis since the age of 17, and had found that the eruption always yielded to a chrysarobin ointment—5 gr. of chrysarobin to the ounce of vaseline. In 1916, wishing to accelerate the cure, he used an ointment of double strength—10 gr. to the ounce. The papules to which the ointment was applied began to thin in the usual way and the usual inner white and outer red zones appeared. But in several places a fresh outbreak of psoriasis papules occurred in a circle at the inner margin of the red zone. On examination it was noted in some instances that the original papule had gone, but there had appeared in its place a ring of fresh papules;

in others a diminished central papule remained, surrounded by a ring of satellites at the inner edge of the red zone. A milder chrysarobin ointment removed the new papules successfully.

I have also noticed in this patient that a psoriasis papule on the scalp may fade away, and leave in its place a typical flat scalp wart needing the application of nitric acid to effect a cure.

CHAPTER XIV

ERYTHEMA NODOSUM AND TUBERCULOSIS

ERYTHEMA NODOSUM has been recorded in conjunction with tuberculosis following an injection of tuberculin, and under other circumstances in tuberculous patients. I have also noticed erythema nodosum when for some reason a chronic tuberculosis has become more acute, or when symptoms of tuberculosis have first become noticeable in a patient under observation as a contact.

Case 1.—A girl clerk, aged 20, developed a cough about February, 1916, but continued at work, and during the summer her cough improved. Early in 1917 the cough returned, with pyrexia, and after some days a typical eruption of erythema nodosum appeared on the legs. This disappeared in about three weeks, but pyrexia continued for some five weeks and then gradually subsided. Tuberculosis was suspected, but the patient returned to work later in the year, still in poor health. In August, 1918, there was an attack of pleurisy, and pyrexia recurred and continued until her death from pulmonary tuberculosis in March, 1919. Early in February there were extensive physical signs of phthisis, with cavitation and fibrosis on both sides.

The eruption of erythema nodosum in this case coincided with, and could reasonably be attributed to, the outbreak of a previously smouldering pulmonary tuberculosis.

Case 2.—A woman, aged 44, the mother of Case 1, had never been very strong, and months spent in nursing her daughter broke down her health. Early in April, 1919, an eruption of erythema nodosum appeared on the fore-arms and dorsum of the hands and on the legs and feet; at the same time she began to cough and her temperature reached 102° in the evenings. There were also night sweats and progressive

emaciation. Early in May the marks of fading erythema nodosum were visible on the arms and legs. In the chest there were physical signs suggestive of somewhat extensive arrested tuberculosis on the right side, and also some signs at the left apex. She died within the year.

Here the eruption apparently coincided with the recrudescence of an arrested lesion.

Case 3.— A married woman, aged 27, was run down and anæmic early in 1913. In April there was an attack of pyrexia and pleurisy, accompanied by a typical eruption of erythema nodosum. Tuberculosis was diagnosed; bacilli were found in the sputum, and the patient spent some months in Winsley Sanatorium. After this she remained well until pleurisy recurred in August, 1915, with an exacerbation of tuberculosis, but without erythema nodosum. In July, 1916, the patient was well, but there were a few physical signs at both apices.

Case 4.—The 2-year-old daughter of Case 3 had an attack of unexplained pyrexia in July, 1916, accompanied by erythema nodosum. In a month she was well again. No physical signs were detected in the chest, but the child was of a tuberculous type, and had a slight general enlargement of the cervical glands. The probabilities are, therefore, that this attack, which belongs to the type of erythema nodosum which is accompanied by prolonged pyrexia, was due to tuberculosis.

It is interesting that a similar condition twice occurred in mother and daughter.

Case 5 is now 27 years old. Her father died of phthisis at 43, and one brother died at 16 of the same disease. When she was 16 she first became ill with erythema nodosum and pyrexia, and has been under treatment intermittently ever since for pulmonary or glandular tuberculosis. This year she developed a typical erythema induratum on the legs, for which she is still under treatment.

In this case erythema nodosum and erythema induratum occurred in the same patient after an interval of ten years.

It is not for a moment suggested that tuberculosis is the only cause of erythema nodosum, but merely that a similar cutaneous manifestation may be due to many

different poisons, one of which is that of tuberculosis. Moreover, the constitutional peculiarity which gives rise to this skin reaction seems to be inherited, like other peculiarities, for instance, the well-known disposition to epidermolysis bullosa after slight injuries. Other structures besides the skin show a similar reaction to different poisons. Identical clinical pictures may be due to different causes, in joints, kidneys, heart and lungs.

CHAPTER XV

SCURVY

THE scurvy of infants is well recognized, thanks to the description of Still and others, but the disease is not often reported in adults other than explorers and sailors, under conditions where it is expected. Certain cases I have seen suggest that the disease is almost as common in elderly people as in children but less often recognized.

Case 1.—An Irishman, aged 68, previously alcoholic, had been bedridden for six weeks and had had a "fit" a few years before. On the present occasion his daughters thought he was suffering more from laziness than anything else; he would not try to leave the single room in which he lived, or even to get out of bed, and during the three months he had been in this room he had not been able to obtain alcohol. He lived on such food as was brought to him, and this was neither liberal nor varied, as the daughters hoped, by an unattractive diet, to coax him downstairs in the hope of obtaining something better there. The room was of moderate size at the top of the house and somewhat bare. The chimney and all the crevices of the window and door were blocked to prevent draughts.

The patient was a bearded man of middle height, not wasted, but with a waxen, earthy complexion. He chatted readily, complaining of occasional sickness, abdominal pains and constipation. The appetite was poor. Two days before I saw him "bruising" was noticed on the left buttock, though he had not fallen, and his gums had been swollen and sore for a few days. On inspection the gums were thick, spongy and very tender; there was an old subcutaneous hæmorrhage in the right calf, and another larger one over the left buttock. There was a hard swelling in the muscles of the right thigh, probaby a deep-seated hæmorrhage, and some fine, speckled, purpuric spots were seen on both legs. The urine was normal and there were no other physical signs.

He recovered in three weeks when moved to a well-ventilated room and treated with an antiscorbutic diet, lemon juice and saline aperients.

Case 2 was 75 years of age, and when first seen she had had swelling of the ankles for about three weeks, with "red and blue patches" on the legs and thighs. She was unable to walk because of this. She went out of the house only in the summer, and her present illness occurred towards the end of her hibernation. She lived either in a well-heated bedroom or in a screened and heated room downstairs, where she protected her head still more completely from draughts by a woollen shawl. Her diet consisted almost entirely of white bread and butter and tea. She informed me that meat or potatoes always gave her indigestion and that her stomach would not tolerate anything acid; therefore she never took fresh or preserved fruit or fruit juices of any kind. She was thin and pale, and her complexion was waxen and earthy. There were purpuric patches on the thighs in the region of the knee, below the right foot, and on either side of the left ankle-joint, which was swollen. The chest wall was tender to percussion, and pressure all over the abdomen gave the doughy feel of flatulent distension. The gums, which were toothless, appeared hard and normal. With some tact and diplomacy this lady was persuaded to eat grapes, and to take lemon juice and lime juice in addition to sundry other food; she was also given doses of sodium salicylate and alkalies. In ten to fourteen days she had recovered.

Case 3, about 82 years of age, had for seven years been hemiplegic, aphasic, and "childish." She lived with her daughter, who had moved to their present house about six months before the patient was first seen. She slept upstairs and was able, with her daughter's assistance, to come down to the kitchen during the day but never to go out of the house. She could not express a wish for any food, and as a general rule used to eat what was given to her. As her previous medical attendant had said that meat was bad for her, and as her daughter, who supported her, was not well off, the dietary was doubtless limited.

This patient was first seen on January 13 because the relatives wished it "in case anything happened." On March 30 I was again summoned and found her coiled up in bed and hardly able to help herself at all. The temperature was just

under 100° F.; any passive movement caused protest. There was a subcutaneous hæmorrhage on the right leg, and another on the left buttock. Suitable nursing and general attention were arranged. My examination was not exhaustive as the conditions were difficult, and the woman's existence was so miserable that a determined effort to prolong it did not seem worth while. The skin over the hæmorrhage on the left buttock sloughed, although she did not lie on it. and new hæmorrhages appeared on the other buttock, where she was lying, and also on the back, rather above the bedsore region, and on the legs. The skin over all these hæmorrhages sloughed as well. On April 18 when the patient was semi-conscious and obviously dying, it occurred to me, for the first time, that she might have scurvy, so I did not merely look at the tongue, but tried to see the inside of the mouth. Although toothless it was in a foul condition, and there appeared to be a hæmorrhage under the mucous membrane of the hard palate. It was too late to try antiscorbutic treatment, and she died in a few hours.

These seem to be three fairly straightforward cases of scurvy. In all three there were the common factors of defective dietary, continued over a long period, and absence of fresh air. One case was cured by fresh air and an altered diet, another by altered diet alone. It would have been interesting to treat the third case on fresh air alone. They raise the question of the effect on nutrition of fresh air and mountain and sea air. The value of fresh food is now being explained by "vitamins"; the discovery of analogous compounds or forms of activity in air from different localities would be still more fascinating, and would lead still further afield. It seems that both ends of life are liable to scurvy. Both these ages are liable to indiscretions of diet; possibly also the auto-manufacture of antiscorbutic substance is small. There are probably numerous cases of minor scurvy which pass unnoticed in elderly people, just as in infants. It seems good policy to try the effect of fresh fruit juices on old men or women, who seem to be failing in health, or "breaking up."

CHAPTER XVI

THE OCCURRENCE OF URTICARIA AFTER SPECIFIC FEVERS

WHEN in general practice I frequently saw uticaria occur after specific fevers, especially after pneumonia and clinical influenza. The eruption usually appears a day or two after the temperature has become normal, but is sometimes delayed a few weeks. It may be so transient as hardly to be noticed by the patient, or it may be persistent and troublesome. It occurred in at least 20 per cent. of my pneumonia cases. Sometimes a slight pyrexia, and occasionally pains in the joints, coincided with the rash.

Case 1.—Fig. 1 shows the chart of a male patient aged 22. On December 22, 1912, he had a rigor, and on December 24 showed typical signs of pneumonia in the right upper and middle lobes. The temperature subsided by crisis on December 28 to 29, but there were few slight fluctuations subsequently. On December 31 a sparse blotchy erythematous and urticarial eruption appeared over the abdomen and limbs; on the limbs it was confined mainly to the extensor aspects of the elbows and the knees. By January 4 it had gone.

Case 2.—Fig. 2 shows a chart of a well-built railway worker aged 46. At the onset there was a rigor, which was followed by headache, malaise, pain in the back and limbs, and epistaxis (twice). Definite signs of pneumonia at the right base were first detected on the seventh day of the illness. The temperature subsided on the eleventh and twelfth days by a rather prolonged crisis; the attack was a severe one. Ten days later, on the twenty-second day of the disease, general muscular pains were complained of. The calves and biceps were tender to pressure on the twenty-fifth day, and from this

to the forty-seventh there was occasional slight pyrexia, after which pain disappeared, and there was an uninterrupted recovery. On the fifty-first day an itching, coarsely-macular rash appeared, mainly a pure erythema but in places urticarial. and with much the same distribution as in the previous case. Within twenty-four hours the eruption had disappeared.

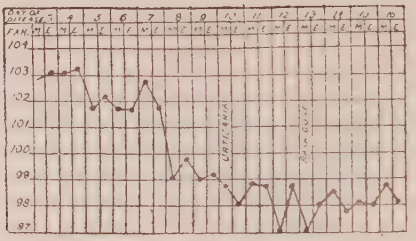


Fig. 1.

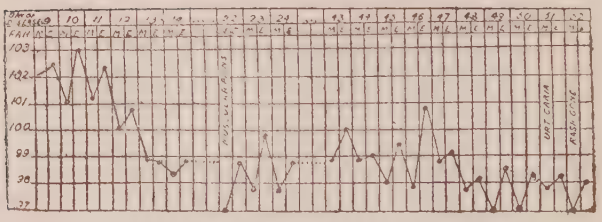


Fig. 2.

Case 3.—A man, aged 29, had an attack of influenza, with pyrexia lasting about seven days but never exceeding 101.° On the eighth day, the day after the temperature had become normal, an erythematous and urticarial eruption appeared, lasting about thirty-six hours.

I have noticed a similar event in several influenza cases. The eruption was of much the same nature and distribution as already described, but varied in extent

and duration. Other rashes were occasionally noticed about the time of onset of the disease, but this was late. I have seen a similar urticarial rash six days after the onset of varicella in a girl of 14, and again eight days after the first appearance of a measles eruption.

In the following cases, for the account of which I am indebted to Dr. Parkinson, of Horncastle, post-febrile urticaria was not such a transient affair as in the first three.

Case 4.—A man aged 65, with no previous history of urticaria or of any other illness, was attacked suddenly with headache and generalized pains, especially in the back of the neck and behind the eyes. For two days the temperature ranged from 101° to 102°, then gradually subsided to normal. The attack seemed a typical influenza. Seven days after the fever subsided a severe urticarial eruption appeared on the arms, legs and abdomen. Some of the patches might have been called "urticaria gigas"; and there was also dermatographia. The trouble resisted treatment by dieting, calcium salts, aperients and local applications for over six weeks. At the time of its disappearance the patient was taking 3 gr. of ichthyol three times a day, but I cannot say whether or not this had any effect.

Case 5.—A girl aged 21 developed a severe sore throat, with pains in the back and limbs. The condition was thought at first to be diphtheritic, but afterwards streptococcal. The temperature rose to 103°, but subsided in a few days; joint pains, however, persisted for fourteen days. Ten days after the temperature had become normal a severe typical urticarial eruption appeared and lasted for a week, subsiding ultimately under treatment with aperients and alkaline baths.

Coincidence must of course be considered, but on the whole I think it can be excluded in most of these cases. Nor can it be said that the eruption was a drug rash, for widely varying treatment was adopted for the different patients. The time at which the eruption occurs suggests its association with the development of immunity, as though the mechanism of immunity, after defeating the invader, proceeded further to uticaria. The concomitant

occurrence of joint pains and slight pyrexia suggests anaphylaxis, which might be related to the disposal of pathological by-products after resistance had developed. The relation of urticaria to calcium salts and of calcium metabolism to immunity provides material for further speculation.

This paper led to private correspondence which showed that the condition is well recognized in fever hospitals and has been the subject of other papers.

Case 1. Results of polyarticular tuberculous arthritis of suppurative type.

CHAPTER XVII

FORMS OF TUBERCULOUS ARTHRITIS AND THEIR TREATMENT[1]

I DO not wish to be dogmatic, to speak as an authority, or to claim any finality for what I say. I am only groping in the dark, dissatisfied with the present classification and treatment of tuberculous arthritis, and trying to evolve something better in the light of clinical material which comes to my notice.

POLYARTICULAR, SUPPURATIVE TYPE.

Case 1.—Male. Polyarticular tuberculous arthritis of the suppurative type. At the age of 1 year the extremities swelled. Various operations were performed on the hands, feet, and elbows, while some sinuses appeared spontaneously. When he was about 7 all the joints cleared up, and have remained healed but much deformed. At 8 and 9 he suffered from pleurisy. At 11 he had tuberculous meningitis, with vomiting and marked head retraction; he was in bed 11 weeks, but made a good recovery. At 16 a cough developed, with hæmoptysis, which has since recurred. Definite physical signs were found in the chest.

There is now (at 20) much scarring and deformity of the fingers and toes, hands, feet, and elbows. There are also tuberculous scars on the left thigh and buttock, and a nodule in the right globus minor testis.

The combination of suppuration and high resistance to tuberculosis seen here seems to be usual. A case of tuberculous meningitis that gets well is no longer considered one of the medical wonders of the world.

[1] A paper read before the Plymouth Medical Society on October 26, 1921.

Case 2.—Male. Another example of the suppurative type. The left knee swelled when the patient was a boy of 19, and tuberculosis was diagnosed. An abscess formed and was opened two months later. Then the neck and the right ankle swelled and discharged, and abscesses appeared over the left sixth and seventh ribs. At the age of 20 the left ankle swelled, but subsided, and in a few weeks was normal again. At 21 an abscess appeared in either groin, and the patient was admitted to hospital with twenty-two sinuses, in a condition that appeared hopeless. No splints were applied and no method of extension was used; he was just fed, and kept clean and cheerful; his disposition was a great help. After hanging fire for some time he began to improve. The sinuses began to heal but contraction of the knees and right ankle occurred; the left knee became flexed to a right angle and was riddled with sinuses. The patient was discharged after one and three-quarter years in hospital with five sinuses (right ankle, left knee and both groins), but able to get about on crutches, and with his deformities already improved by his efforts to walk and to straighten the limbs in bed. Sixteen months later all sinuses had healed, the joints appeared functionally normal, and the patient was about to obtain work. The left knee, though it could be flexed and extended almost normally, required more muscular effort than normal for this movement, which made a grating noise audible 10 to 12 yards away. This patient has now worked regularly for five years. He has a wife and two children.

I would like to emphasize the more or less transient swelling of one ankle. I attribute the remarkable functional recovery to the attempts made to straighten the limbs while the joints still discharged and the fibrous tissue was still young.

Case 3.—A married woman, in whom tuberculosis of the left hip, with suppuration, occurred at the age of 29. A year later there was hæmoptysis and spinal caries, and the patient was kept in bed for seven months. At 31 she was confined, and three months later hæmoptysis recurred; the left hand swelled and was operated upon, healing within three years. At 34 the right hand swelled and was operated upon. Vomiting and gastric trouble next supervened, and for three years the patient was ill in bed. A laparotomy at 38 revealed tuberculosis of the stomach. At 40 there was an attack of pleurisy.

Case 2. After four years. (1) Knee extended. (2) Knee fixed to show functional recovery. (3) Ankle dorsiflexed. (4) Ankle extended.

At 41 the right arm and hand swelled and discharged. The three inner fingers of the right hand were removed at 42. Later there was pleurisy and diarrhœa. At 43 the left ankle swelled and was painful, but became quite well in a few months without special treatment. The right shoulder became painful and stiff at 44, and then the left. At 46, major tuberculosis of the right hip occurred; there was much pain; a sinus formed after a while and a piece of bone came away. At 47 there was vomiting, hæmatemesis and pain in the right foot and hip, and another abscess formed in connection with the right hip. At 48 she had tuberculous meningitis and was unconscious for a week, but she made a good recovery and at 54 still lives. It cannot be said that the operations were of any real benefit.

Case 4.—Female, had pleurisy with effusion at 16. The left elbow swelled and discharged at 17, as did also the right wrist after two aspirations. The wrist healed with a perfect functional result in about three months, and has not relapsed. At 18 there was pain and swelling of the right shoulder, which subsided in a few weeks. Later in that year she was delivered of an illegitimate child; this delivery was followed by a severe relapse with remittent pyrexia, emaciation, and a copious discharge from the left elbow, which became flail. The shoulders and the right elbow were also affected, but cleared up rapidly and perfectly without special treatment, except the right shoulder, which remains stiff. The left elbow was put up in plaster in the extended position, and unfortunately is now ankylosed. At 21 she married, has now just been confined a second time, and is in good health.

Case 5.—Male, aged 16, developed a tuberculous abscess in the upper and outer part of the left forearm, which was opened. The dorsum of the left hand became affected, then the left great and second toes, which opened spontaneously. At 17 the left ring-finger became diseased, and at 18 an abscess formed over the inner side of the left hand, and over the right wrist another, which burst, leaving sinuses. Two toes were removed. The axillary glands were next noticed to be affected, and a swelling of the left knee developed, for which nothing was done but which subsided in a few weeks. The patient wore splints for the wrists on and off for a few months. He worked intermittently, even when splinted; at 21 he commenced regular work as a shop assistant, and has

continued since. The wrists were then still troublesome but are now healed, with a good functional result.

Monarticular, Major and Minor Types.

Minor tuberculous arthritis has escaped definite recognition, though surgeons have suspected its existence. Arthritis in tuberculous patients may clear up rapidly and spontaneously. Other apparently exactly similar joints develop a major tuberculous arthritis.

Case 6.—Boy of 7, with a tuberculous father, living under bad home conditions, developed definite rigidity and tenderness of the dorsilumbar spine; he was notified as tuberculous and seemed a typical case of early Pott's disease. He also had extensive enlargement of the cervical glands, which was considered tuberculous. In three months, although no special treatment had been adopted, there remained only a slight stiffness. One year later the spine seemed normal and has remained so.

Case 7.—Female child, living with a tuberculous grandmother and aunt, was operated upon at 2 years for tuberculosis of the left thumb, left great toe, and left epitrochlear gland. At 3 she developed a limp, pain in the left hip, and weakness of the left leg. There was no obvious deformity or loss of movement, and she was well in two months.

Case 8.—Female, aged 35, who had been in a sanatorium for phthisis (stage 2), and whose sister had a tuberculous knee, developed pain and stiffness of the left knee. There was a slight fullness and tenderness on the inner side of the joint, but in a month or so it seemed normal.

Case 9.—Female, under treatment at 12 years of age for a tuberculous hip. For one month she was confined to bed, then became better and got about, remaining only a little lame. At 32 she developed phthisis, with a positive sputum; there was then a just discernible stiffness of the left hip.

Case 10.—Male, with a tuberculous wife, had swelling of the left knee at 33, diagnosed as tuberculous. Scott's dressing was applied for six weeks, then plaster for eight weeks, after which the joint appeared well, and he began to use it. Within two weeks a slight effusion recurred but movements remained

free and painless. A week or two later the joint was normal again, and has remained so for six years.

Case 11.—A labourer, aged 33, came to my surgery to complain of pain in the region of the right sacro-iliac joint. On separating the iliac crests, slight but definite pain was referred to that joint. I made some notes, entering as the diagnosis "sacro-iliac arthritis," and treated him symptomatically. He returned to work about a week later, and worked regularly for some two years. He then developed an obvious tuberculosis of the right sacro-iliac joint, which I trephined and scraped, and I later treated him with tuberculin. The patient did not do well and suppuration spread into the buttock and down the thigh, but he made a good recovery after four years in hospital, during which he was sometimes extremely ill. He has now worked regularly for seven years and his disability is negligible. No merit is claimed for the treatment, but it was considered up-to-date at that time. Here a minor tuberculous arthritis became major after two years.

Case 12.—A boy of 4 had pain in the left hip and limped. His father, who had lost two brothers with tuberculous hips and had, to some extent, lost faith in doctors, kept him lying down for a few days, then allowed him gradually to get about again. There was no further trouble in that joint; but two years later this boy developed major tuberculosis of the right knee, for which the joint had finally to be resected.

I am informed that calves, when injected with living tubercle bacilli for experimental purposes, sometimes develop a more or less transitory swelling of one or more joints. Fluid from these joints has been found to cause tuberculosis in guinea-pigs, and in some of them indications of tuberculosis have been found post mortem.

I sum up the proofs of the existence of minor tuberculous arthritis as follows:—

(1) The occurrence of more or less transient joint swellings in patients with several joints obviously affected.

(2) The occurrence in tuberculous subjects of what appear to be definite tuberculous joints, which yet clear up rapidly and spontaneously.

(3) The fact that some joints may get well and then

relapse, ultimately to become typical cases of major tuberculosis.

(4) Animal experiments.

It must be borne in mind that between major and minor tuberculosis there is no sharp line, and that all intermediate grades may be seen.

Polyarticular Rheumatoid Type.

This type closely simulates rheumatoid arthritis.

Case 13.—A labourer, aged 55, with three tuberculous children, one of whom has since died, was seen as a contact, in bed with "rheumatoid arthritis." He had been ailing for four or five years, getting thinner and short of breath. For nine months there had been pain in the right hip, and for a lesser period in the other hip, elbows, shoulders, knees and wrists. The joint pains were severe. Pulmonary tuberculosis was obviously present, and there were fusiform swelling and tenderness of all the larger joints and some of the interphalangeal joints, but these for the most part escaped. He died of hæmoptysis one month later.

Case 14.—Female, seen as the contact of a tuberculous daughter, who has since died. At 41 there were pain and swelling of the right elbow, then of the right ankle, and by 42 the knees, elbows, shoulders wrists and ankles were very tender, with slight effusion into the joint and periarticular thickening. The condition was typically "rheumatoid." At 44 the carpometacarpal joint of the right thumb became affected; there was also pulmonary tuberculosis, with a positive sputum. At 45 several finger- and toe-joints were affected and also the spine, but the atlanto-axoid joint and the hips still remained free. She died at 46.

Polyarticular, Osteoarthritic Type.

In this the fusiform swelling, sweating and general symptoms of rheumatoid arthritis were absent, but lipping of the ends of the bones and the appearance of the joints would justify a diagnosis of osteoarthritis. I believe the joints which my chief used to show me, when

house surgeon, as "osteoarthritis becoming tuberculous," were really examples of this type of tuberculous arthritis.

Case 15.—An alcoholic steelworker was troubled at the age of 33 with swelling of the right knee. There was not much pain, but the swelling increased, lipping of the bones developed, and at 34 an operation was performed and some Baker's cysts were removed. He resumed work, but the other knee became affected, and at 37 I removed some Baker's cysts on that side; the appearance of the fluid was that usually associated with tuberculous joints. However, he was much improved and worked for over a year, when gradually increasing swelling of the knees again incapacitated him. This time the fluid was aspirated and firm pressure applied, after which he resumed work for another year. Swelling then recurred with pyrexia; signs of pulmonary tuberculosis were found, and later a pleural effusion formed, and swelling and pain took place in other joints—ankles, shoulders, wrists, hips and elbows. The patient died of tuberculosis at 41.

Case 16.—Male, with somewhat extensive signs of pulmonary disease, complained, at 23, of intermittent swelling of the fingers, knees, shoulders, elbows and wrists. When first seen there was pyrexia, 100·5° F., a pulse-rate of 132, and respiration-rate 24, but the joints were not then swollen. Three months later swelling of the right hand was found, and one year later the right wrist, right ankle, and the small joints of hands and feet were affected. There were stiffness and pain, but no deformity.

Case 17.—As a girl of 13 had a tuberculous left hip and was under treatment for four years before arrest of disease took place with ankylosis and shortening. Lung symptoms and signs developed at 21, and a few years later abdominal tuberculosis led to two months in hospital for intestinal obstruction. Later again this patient was in bed ten months for "gastric ulcer." Then other joints became affected with a condition diagnosed as "osteoarthritis," for which she underwent treatment in different institutions. At 30 there were signs of somewhat extensive pulmonary tuberculosis. There was fibrous ankylosis of both knees and of the right wrist and shoulder, together with stiffness and pain of varying degrees in the ankles, left shoulder and jaw.

Polyarticular, Arthritis Deformans Type.

Arthritis deformans is often described as a different entity from osteoarthritis. The following are cases of tuberculous arthritis deformans :—

Case 18.—A sailor of 18 injured his right knee, which swelled up a few days later but did not prevent work. Three months afterwards he had to lie up, and was admitted to hospital six months after the onset with the diagnosis of tuberculous knee, urethral sources having been carefully eliminated. He was treated with tuberculin, to each dose of which there was a local and general reaction. Subsequently swelling of the left wrist, right elbow and left knee occurred. I saw him when he was 19, and had an effusion into both knees, left wrist and right elbow, and a pyrexia ranging from 98° to 101° F. At 20 the right shoulder and jaw, both hips, ankles, knees, wrists and right elbow were affected. The pain was very severe, the patient helpless and bed-ridden. Later pleurisy developod, then swelling of both ischial bursæ. At 21 there was left iridocyclitis. The feet and hands gradually became extremely deformed. The tibiæ were displaced backwards and outwards on the femora to a remarkable extent, obstructing the popliteal vessels and causing fatal gangrene of both legs at 24.

Case 19.—Male, aged 21, was under treatment for two and a half years with tuberculosis of the right hip. At 27 there was a first hæmoptysis, and swelling of the left middle finger, left ankle and right knee occurred. From this time onwards a cough and joint pains were constant. At 39 the cervical spine became affected, and an osteophyte was noticed on the inner side of the left ankle. At 40 an osteophyte was noticed in the right groin. At 42 all the interphalangeal joints were affected and ulnar deflection began. At 44 exacerbations of lung or joint trouble still occurred, and there was occasional hæmoptysis. This patient carries on intermittent work as an insurance agent. Rest in bed rapidly improved his general condition, but made his joints stiffer and more painful, so he preferred to remain about.

The name tuberculous rheumatism may justly be applied to fleeting joint pains or swellings in tuberculous subjects, or to some attacks of acute rheumatism which do not yield to salicylates.

Case 20.—Female, aged 24, with pulmonary tuberculosis of medium extent, was in bed for three months, suffering from what seemed typical rheumatic fever. There were pyrexia, swelling, and pain which flitted from joint to joint. She made a good recovery, has married twice since then and has had no further joint trouble.

Aberrant Forms of Tuberculous Arthritis.

(1) *Intermittent Hydrarthrosis.*

Case 21.—A boy of 13 developed a swelling of the left knee. He recovered after five weeks and remained well until 15, when there was another swelling of the knee which lasted a few weeks, and also a somewhat extensive pleurisy. Physical signs of pulmonary tuberculosis were discovered.

A girl of about the same age suffered from intermittent swelling of both knees and the diagnosis seemed to be tuberculosis, but there was no pulmonary lesion to support this opinion.

(2) *Extra-articular Arthritis.*—In these cases I think the main joint cavity remained clear, and the disease was confined to bone or the outer layers of the synovial membrane.

Case 22.—Female, aged 17, whose right knee began to give way and was found to be swollen. She had been in bed five weeks when I saw her and the knee was hot and stiff, but only swollen on either side of the ligamentum patellæ. A back splint had been applied. The patient remained in bed three weeks longer, then was about in a bath-chair for four weeks, after which she discarded the splint and began to walk. An abscess formed and discharged, leaving two sinuses. The sinuses healed in eight months, while the girl continued at work as a shop assistant, wearing a bandage. The joint remained functionally perfect after three years.

Case 23.—Female, aged 16, twisted her left knee; some weeks later gradually increasing pain and swelling occurred. Eight weeks after the injury she had to lie up. I saw her again two months later. There was pain and some stiffness of the left knee, and on the outer side anteriorly below the midpatellar level was a swelling which seemed to be in the synovial membrane. Gradually the swelling softened, and

burst a few weeks later. The sinus closed in another few weeks and, except for a scar, the joint was normal two years after the illness.

(3) *Dry Ankylosing Arthritis of the Shoulders.*—This condition not infrequently occurs in phthisical patients.

Case 24.—Female, aged 55, with moderately advanced phthisis; her mother, two brothers, and two sisters had died of phthisis. She was sent to a sanatorium and thence to an asylum because of mental trouble. She married after a few months at the asylum, at 57; eighteen months later there were fibrous ankylosis of the left shoulder and partial ankylosis on the right side.

One might also include in this class patients with capricious resistance, in whom the resistance seems to vary within wide limits with or without a definite cause.

Case 25.—Female, aged 21, who had suffered from cough and a "weak chest" since 14 and had never been able to work, developed an exacerbation of her phthisis after the birth of an illegitimate child. The left knee, six months after the confinement, was a typical tuberculous knee. No splint was used, but the patient was confined to bed with pyrexia for about six months. She then began to get about again, and soon afterwards took a daily situation as nursemaid. Nine months later the disease of the knee was arrested.

Proposed Classification.

(1) Monarticular tuberculous arthritis, which may be subdivided into (*a*) major, and (*b*) minor arthritis.

(2) Polyarticular tuberculous arthritis, which may be subdivided into: (*a*) Suppurative; (*b*) rheumatoid; (*c*) osteoarthritic; (*d*) arthritis deformans type. (*c*) and (*d*) may, indeed, be included in one sub-group, but, as some would differentiate between them, I have made two headings.

(3) Tuberculous rheumatism.

(4) Aberrant forms of tuberculous arthritis.

This classification, like all others, is no more than a mnemonic. That of Poncet and Leriche, whose monograph on this subject I purposely did not read until I had

reached my own conclusions from clinical observation, seems much too complex, and would itself need a mnemonic. Moreover, though Poncet and Leriche give a most interesting series of observations, I think they claim more for tuberculosis than is justified.

Treatment of Major Monarticular Arthritis.

It is generally acknowledged that operation gives bad results and should only be resorted to exceptionally. It is also admitted that for active disease, accompanied by pain and muscular rigidity, rest in bed and extension are the best remedies. The extension should be in the axis of the limb segment below the deformed joint, and is gradually altered as the limb straightens. Theoretically, it is harmful to apply extension in any other way, but Nature is very adaptable, and I have often seen relief follow the disregard of this rule. For a deformed spine no method of extension can really succeed. It is, however, open to discussion whether the aim of treatment should be ankylosis of the joint in a suitable position as is frequently stated, when so many untreated or partially treated cases end in arrest of the disease and a functionally perfect result. Complete immobilization, as in plaster, has its dangers.

Case 26.—At the end of one December a healthy, robust female of 30 slipped from a stool on to the flat of her right foot. Pain followed, but the patient continued working for a few days, until increased pain incapacitated her. The foot was bandaged and immobilized in splints, but when they were removed the pain remained, and finally tuberculosis was suspected, and plaster was applied for two or three months. I saw her the next May, when she was confined to a bath-chair. The right leg and foot were cold, blue and œdematous and movements were painful, but there was no muscular rigidity. The condition seemed purely functional and not tuberculous. X-rays confirmed the diagnosis, but showed a remarkable thinning and lessened density of all the bones of the affected foot. Massage, passive and active movements were persevered with, in spite of pain and discomfort. The inner side of the boot was raised and an instep support ordered for a time. At

the end of a month she could get about, and in three months could discard her supports. Had active treatment been adopted early the disability would probably not have lasted more than two or three weeks.

The bones, and probably all other tissues, varying at all stages of life, are in a state of flux, old bone being absorbed and new deposited. Immobilization sidetracks the circulation and causes wasting of muscles, ligaments, soft tissues and bones. It seems doubtful if under such conditions the products of tuberculous inflammation can be adequately removed, even when resistance has been raised and tubercle bacillus defeated. For this reason fibrosis follows instead of resolution. When heliotherapy first became fashionable I suggested that one of its advantages was that it would lead to less complete immobilization of tuberculous joints. I now read in an article by Rollier, "Plaster was finally abandoned in favour of apparatus which provided sufficient immobility without interfering with the access of air and sun to the affected part." Kisch takes the joints off splints for passive movements at regular intervals.

No absolute rules can be laid down; ankylosis will sometimes result whatever is done, and plaster may be a most useful aid to recovery. A tuberculous knee may do very well in plaster although the patient continues to walk on it. But, generally speaking, the immobilization of a tuberculous joint should be relative and not absolute. Such splints as the Thomas knee- and hip-splints and simple spinal supports seem to give better functional results than absolute fixation, either in plaster or in accurately fitted celluloid splints. For abscesses everyone will agree that aspiration, as practised at Alton, gives much the best results. Perhaps there is now a tendency to rely more on simple aspiration and less on the injection of substances into the abscess cavity, which certainly increases the risk of a sinus. Time does not allow a detailed consideration of the treatment for each joint. Many points might be raised. For instance, is an extension-frame

for spinal cases essential? Would not simple rest in bed be sufficient, especially if the patient were maintained in the supine position? The prone position is also useful. Splendidly managed and up-to-date institutions like Alton or Leasowe might give us some useful controlled observations on the point.

Short Cuts.

The question of short cuts in the treatment of tuberculous joints needs careful consideration. Three years or more has been laid down as the minimum for the cure of a tuberculous hip, yet patients often abandon treatment either voluntarily or on medical advice with functionally excellent results. Now and again a relapse occurs and it is the relapsed patient rather than the one who has neglected advice and recovered that comes to the notice of the specialist. If a patient who has relapsed resumes strict treatment the disease often becomes quiescent again in a short time. Here are a few instances of short cuts :—

Case 27.—Male, aged 6, with diagnosis of a tuberculous hip, confirmed definitely by X-rays. He was three months in hospital, and was then discharged with a Thomas hip-splint and pattern. He discarded both these within six months, and has remained well since. When he was 12 the joint was functionally perfect.

Case 28.—Female, aged 15, had swelling and pain in the left knee at Christmas, 1915. It improved, but was again affected towards the end of 1916. She did housework intermittently and with difficulty. In June, 1917, she had to lie up, with night pains and the typical picture of a tuberculous knee. For nine months she wore a Thomas knee-splint, then discarded it and used the joint. There was no relapse. Subsequently she married and had one child, and the knee remained normal. In 1926 she died of pulmonary tuberculosis.

Case 29.—Female, aged 22, suffered from pain in the back for some months, which occasionally kept her awake at night. There was a slight projection of the dorsilumbar spines and

tenderness on percussion in this area, with rigidity of the muscles. Pott's disease was diagnosed and the patient was put to bed and kept on her back. The pain gradually subsided ; after six months she got up and the spine has since remained normal (three years). She wears no apparatus other than a rather high pair of corsets.

Case 30.—Female, aged 10, was treated for some months for tuberculous disease of the left knee. At 16 the right ankle swelled and burst, discharging for a short time. I saw her two years later because of a suspected recurrence of disease in the ankle. The right ankle was swollen and hot, and 1½ inches more in circumference than the left. Plaster was advised but refused, and after resting a few weeks she recommenced work as a domestic servant and has worked continuously for four years. The ankle has been bandaged and is occasionally painful, but is functionally useful, though not perfect.

Case 31.—A fisherman had pleurisy on the right side at 26, and on the left at 27. There were signs of pulmonary tuberculosis of medium extent and tubercle bacilli were present in the sputum. The patient was sent for three months to a sanatorium. Next the right knee became swollen, stiff and painful and seemed clearly tuberculous. A splint was advised but refused, and the patient returned to sea after resting a month or two. The right knee was normal thirteen months after the onset and remained so. Tuberculosis of a right costal cartilage then occurred and burst and discharged for a few months. At 30 there was double "sciatica" and back pain with marked rigidity of the lumbar spine, but the patient continued at work and after a few months this also cleared up. At 32 a marked exacerbation of pulmonary disease took place and he died at 33.

Case 32.—Female, aged 18, had pain in the back, and her doctor diagnosed lumbar caries with an abscess. Another doctor agreed with the diagnosis and opened the abscess in his surgery, liberating 1½ pints of pus. I saw her with a sinus and agreed that spinal tuberculosis was present. The sinus healed in a few months and she has remained well since (six years). She is now married and has one child.

Case 33.—Farm labourer, lost his wife from pulmonary tuberculosis when he was 44. At that time he began to suffer from severe lumbar pain and, although treated with liniment

and medicine for two years, had great difficulty in continuing at work. At 46 the right shoulder swelled, and when seen by me there was tuberculosis of the lungs and of the right shoulder, with suppuration, as well as a marked Pott's curve in the upper lumbar region. The shoulder was operated upon and is now ankylosed, but a sinus persists. The back has been painless for over a year.

Case 34.—Female, aged 9, had pulmonary tuberculosis and was very ill. When seen there were rather extensive signs, the temperature was 101° F., the pulse-rate 132 and the respiration 35. Gradually she improved, but at 10 there were pain and stiffness of the right hip, and subsequently a swelling appeared in the right buttock. She was in bed one month, then gradually began to move about again. Six months later the swelling had disappeared. At 11 (one year later) she could walk three miles a day. At 12 there was still a prominence in the right groin, and fullness of the veins. At 13 this had disappeared. She attended school regularly.

It is impossible to be dogmatic when treating a disease of varying virulence attacking patients with widely different and ever-varying resistance; but in the days to come it is likely that the reputation of a surgeon dealing with tuberculous joints will depend upon his knowledge of how and when to take short cuts. There seems to come a time during the treatment of tuberculous joints when the tide turns and the patient's resistance begins to defeat the bacillus. This is the moment, when the enemy is "on the run," to commence movement whether sinuses are present or not; but I hesitate to give any rules for detecting this crisis.

Finally, I will cite a case of obstetrical as well as surgical interest.

Case 35.—Female came under treatment for tuberculous hips as a girl of 3. Disease of the spine developed about 5, and subsequently a lumbar abscess was incised. The disease became arrested in spine and hips, but the hips were lef ankylosed in the adducted position, so that the internal condyles of the right and left femora were in contact and walking was difficult and ungraceful. At 23 she married a sailor and at 27 became pregnant. (The Navy has a well-earned reputa-

tion for resource). It seemed unlikely that this child would be born alive without a Cæsarean section, but after what the patient called a "terrible" time the child was born normally. (Nature may show even more resource than the Navy.) The movement of the hips has improved and the knees can now be separated over 1½ in.

Tuberculous Pus.

It is frequently stated and generally believed that the tubercle bacillus alone does not cause pus, although at any hospital, on almost any day, thick pus can be seen from a purely tuberculous abscess.

One Monday I heard a surgeon say in his lecture, "The tubercle bacillus never gives rise to pus; clear fluid and broken-down debris, but never pus." On Tuesday I heard the same surgeon, about to open a psoas abscess, say, "My first step will be to let out the pus"; then later, "Receiver ready for the pus," and again, "Take the pus away."

Such contradictions confuse the student. Moreover, the dictum that the tubercle bacillus does not cause pus has been transferred to pulmonary tuberculosis, so that it is often stated that pus in this disease means secondary infection. Yet this by no means follows, and an autopsy on a case of phthisis usually reveals cold abscesses of the lung which have not yet burst into a bronchus, as well as the cavities of others which have already discharged.

The conception of pus differs widely in the minds of different authorities, and it would be useful if a committee of authorities and others could evolve for us some authoritative definition, as physiologists do with their own terminology.

CHAPTER XVIII

SOME CURIOUS EPIDEMICS

THE epidemics met with in general practice sometimes differ from any recognized infectious disease. An accurate record of these is important, but it is difficult, chiefly for three reasons :—

The *first* difficulty is coincidence. This in itself deserves the fullest investigation, but is a metaphysical rather than a medical problem, since it is not confined to disease. For some months, perhaps, nearly every difficult labour is an occipito-posterior presentation ; three fractured femurs occur within a few days and then perhaps none for a year. More curious still, each term in the dissecting room sees its own batch of similar anomalies ; one session abnormal vertebral arteries and the next abnormal brachials.

The *second* difficulty is the involuntary tendency to co-ordinate observations and to make imperfect records fit with a preconception.

The *third* difficulty is inaccurate information from the lay public or from colleagues ; many a fascinating discovery melts away, like fairy gold, under careful investigation.

(1) EPIDEMIC COLITIS.

These cases were observed near Winchester early in 1906 :—

(*a*) A boy, aged 7, was seen on Febuary 14. He had been taken ill on the night of Febuary 12, complaining of pain in the abdomen, chiefly in the left side. Vomiting followed, first yellow and then black ; it got better after the second day. " Slime and froth " were passed by the bowel near the onset,

but no blood was noticed in the motions at that time. On the morning of the 14th there was a fainting attack lasting two hours; the child was unconscious and very blue in the face. The mother noticed that his heart was beating irregularly. The child was very pale, the temperature 98° F., and the pulse 100-110 per minute and irregular, the beats being grouped; the heart's first sound was poor. Examination of the abdomen revealed tenderness in the left iliac fossa and in the epigastrium. On February 15 blood and slime were passed by the bowel, but there was no tenesmus. On the 16th there was another fainting attack, but later in the day the abdominal tenderness was much less noticeable. The child recovered in a few days.

(*b*) Another boy, also aged 7, and living in the same row of cottages, was seen the same day. He had been ill for five days with abdominal pain and frequent passage of blood and slime by the bowels; when not passing blood he was constantly straining. For two days he had had "a cough and cold." He seemed to be recovering, he was pale with a coryza and a dry cough. The temperature was 99·2° F., the pulse-rate 110-120 per minute; the abdomen was only slightly tender, but much gurgling was felt. The motions contained chiefly blood and streaks of mucus. Recovery was uneventful.

(*c*) The next family lived in a different part of the village. The mother, aged about 35, was seen on February 11, and dated her illness from three weeks before, when she had been cold and shivering for three days, and had suffered from abdominal pain and diarrhœa, with passage of blood and slime. This had continued to a lesser extent, but she had recovered sufficiently to resume work, and a complete examination was not made.

(*d*) The baby had been very fretful from February 1 to 4, passing blood and slime by the bowel.

(*e*) The oldest child, a girl, aged 12, was taken ill on February 11, with shivering, abdominal pain and the passage of blood and slime. She was pale; the temperature was 99·6° F., and the pulse-rate 110 or more, but the heart was normal. The abdomen was tender and the spleen palpable; there was also a slight cough. On the night of February 12, a black fluid motion, suggestive of altered blood, was passed, as well as some bright blood. On February 17 she had recovered.

(*f*) The second child, aged 8, passed blood and slime and was ill on February 9. She was found to have tenderness in the left iliac fossa and a slight cough. By February 14 she was well again.

(*g*) A married woman, aged 39, who lived in an adjoining village about a mile from the other cases, was taken ill on February 7, with shivering, abdominal pain and headache; blood and slime were passed and there was tenesmus. On February 8 she was pale, the temperature 99·4° F., and the pulse-rate slightly raised; there was abdominal tenderness, especially marked in the left iliac fossa, and the spleen was palpable. The motions were scanty; they contained much mucus, with streaks and flakes of bright blood.

I attended other similar cases about the same time but have no further notes. The mucous membrane, per rectum, felt thickened and roughened in all the cases examined.

The epidemic was characterized by tenesmus and the passage of blood and slime per rectum, accompanied by abdominal tenderness, usually more marked in the left iliac fossa. Occasionally gastric or intestinal hæmorrhage took place, and there was an accompanying cough and coryza. The onset was usually with a rigor, sometimes preceded by a few days' malaise. The spleen was sometimes palpable and the heart was occasionally irregular.

The food and drink supply was investigated and no common factor discovered, nor was there any definite evidence that the disease was influenza.

(2) Epidemic Nephritis.

(*a*) In November, 1907, I was called to see a little girl, aged 5, who had been ill three days. There had been vomiting at the onset with loss of appetite, and early swelling of the legs and body. There was general œdema and a temperature of 100° F., the chest and abdomen were normal. The urine was cloudy, pale yellow and it contained a cloud of albumin, leucocytes and epithelial and granular casts but no blood. The child was well again in a few days.

(*b*) This patient shared the bed of an elder sister, aged 15, who was being treated for "nephritis" by another practitioner, and who also made a quick recovery.

(*c*) A few days later another sister, aged 10, fainted, and was found on examination to be passing blood and albumen in the urine.

(*d*) During the same month another sister, aged 8, developed a purpuric eruption on the legs and albuminuria.

(*e*) The mother, who was eight months pregnant, became very ill and pale, and was found to have œdema of the legs and albuminuria.

I was treating other cases of nephritis in the town at that time, and a fellow practitioner told me that he had then four cases of "subacute nephritis" under treatment in the same neighbourhood.

(3) Infectious Purpura.

(*a*) On November 22, 1909, I saw a girl, aged 12, who had been shivering and ill for three days. On November 20 she vomited and on the 21st a rash appeared. She did not seem ill and the temperature was normal. There was a purpuric eruption, chiefly on the limbs, but one or two spots on the body; the dorsum and palms of the hands as well as the wrists were affected, but the arms, thighs and buttocks were the worst. The eruption consisted of roughly circular, slightly raised patches, varying in size from a pin's head to 3s.

(*b*) By November 25 the eruption was fading rapidly, but a younger sister and the baby (*c*) were ill. The former had a headache and was sick; next day a fine purpuric eruption appeared on the thighs, buttocks and arms.

(*d*) Another younger sister was taken ill on November 23, and about the 25th had a purpuric eruption scattered over body and limbs.

The eruption of the two younger sisters was much finer, and the largest patches were hardly larger than a silver penny. On the baby I did not notice any eruption, but, as he had some fine papules on the skin before he became ill, it may have been missed.

(4) Infectious Stomatitis.

There is a severe form of stomatitis, accompanied by a good deal of general disturbance and passing rapidly from one child to another through the household. The disease does not seem to be definitely mentioned in text-books, although it is common enough. The breath is

heavy and foul, and fever up to 104° is not uncommon. Children just recovered from infectious diseases, such as whooping cough, seem likely to start the infection, and the convalescence is generally rather prolonged. The Clinical Research Association reported of one case: "No diphtheria bacilli were found, but numerous micrococci."

(5) Pink Eye.

The epidemic generally occurs in schools and is to be distinguished from an ordinary Koch-Weeks conjunctivitis by the slight pyrexia which accompanies it, as well as by a general disturbance and some swelling of the face.

(6) Infectious Jaundice.

This disease, like rhinitis, may be due to several different organisms.

(7) A Series of Pneumonia Cases in one Household.

On July 7, 1911 a boy of 2½ became feverish and rapidly developed signs of a left lobar pneumonia. The crisis occurred on the sixth day and recovery was rapid.

On July 14, his father, aged about 27, had a rigor, succeeded by a severe attack of left lobar pneumonia, with a crisis at about the ninth day.

On September 11, a brother, aged 3½, began to be ill, and soon showed signs of a right lobar pneumonia, necessitating an operation for empyema on September 29. The recovery from the empyema was interrupted on the seventh day by a rise in temperature to 100° F., and an increase in respiration rate from 28 to 36 and in pulse rate from 108 per minute to 152. Pericarditis was suspected, but examination negatived this and showed distinct signs of a left lobar pneumonia. The temperature was normal again in two or three days, and convalescence was uneventful.

On October 27, the first patient again became ill and went through an attack of right lobar pneumonia, with a crisis on the fifth day.

The mother alone escaped infection.

These cases show how infectious pneumonia may be, and how short is the period of immunity in some cases. The organism was evidently a virulent one, as all the first attacks were severe; the two second attacks were much milder, and had an earlier crisis.

It is interesting to speculate on the cause of these epidemics. It is usually suggested that they are due to an atypical form of influenza. Influenza is certainly a curious disease and seems able to attack almost any part of the body: brain, kidney, bile ducts, or heart. Moreover different epidemics tend to attack different parts. On the other hand it is probable that other organisms, not yet recognized but belonging to the same group, are responsible for some outbreaks. In "influenzal" meningitis, for instance, Cohen has described a special organism, which closely resembles the influenza bacillus and yet can be differentiated from it.

Some infections which give rise to similar symptoms may be due to different organisms. One epidemic of nephritis, or of jaundice, may be due to one organism and another to another. *Bacillus coli* and *B. lacticus*, for example, have been considered the cause of epidemics of jaundice in children, while in an adult epidemic among German soldiers Jaeger found a *B. proteus fluorescens*. The infected soldiers had all bathed at a certain place in the river, and an illness was also discovered among the ducks and geese living on the bank of the river at this spot. In the diseased ducks the same *B. proteus fluorescens* was found.

Some epidemics may be due to non-microbic poisoning such as the Paris epidemic of "acrodynia" in 1828, which was due to arsenical poisoning. This would not account for any of the epidemics now described, except perhaps the "epidemic purpura," in which the food supply was not investigated.

The Great War was responsible for many curious epidemics, e.g., gingivitis, and possibly encephalitis lethargica. Doubtless overcrowding and repeated casual inoculation with all sorts of organisms rendered some normally harmless microbes pathogenic.

A physician who travels about the country all the year round cannot fail to be struck with the importance of minor epidemics, of which the gastric or intestinal are the most frequent. The prevailing symptoms are diagnosed differently in various localities. At A. I am told that a serious defect in the water supply is causing general sickness. At B. in the same week, pork pies or sweets are incriminated, while in C. gastric influenza is announced. Sometimes a short, sharp, symptomless pyrexial attack is common; sometimes appendicitis suddenly becomes more frequent. Somatic muscular pains may appear in epidemic form, and a series of cases of heart pain leading, apparently, to no permanent lesion has been narrated to me. I am beginning to doubt whether all epidemic parotitis is due to the same microbe, and it has already been shown that scarlet fever is polygenetic. The common cold takes various forms and is especially frequent in some winters. When it is infrequent the advocates of various prophylactics have their day; one patient is sure that he owes his immunity to warm clothing, another to cinnamon, another to a glass of milk at night or cold baths in the morning, while yet another recommends vaccination,

CHAPTER XIX

THE EARLY DIAGNOSIS OF SPECIFIC FEVERS

THE early diagnosis of the common specific fevers is often extremely difficult, its importance is greater in private practice than in hospital, and there is nothing which raises a practitioner so high in the opinion of all concerned. On the other hand an incorrect diagnosis lessens confidence. Unworthy subterfuges are sometimes used. We are all familiar with the excuse that "the child has just missed having measles," or "the scarlet fever was taken in time." We know the child who has a sore throat "which turns to diphtheria," and perhaps also the infant who "has had chicken-pox inwardly." More glaring still, cases of diphtheria for instance, are called tonsillitis, scarlet fever is treated as rheumatism, and variola as varicella, because the practitioner dare not face the results of an altered diagnosis. In the long run, and apart from ethical considerations, it is probable that a courageous change of opinion, on sufficient grounds, pays the practitioner both monetarily and mentally, though for the time a patient may be lost.

Certain points occasionally aid the early diagnosis of specific fevers:—

(1) Glandular enlargement.
(2) Prodromal rashes.
(3) Appearance of the throat and of the buccal mucous membrane.

GLANDULAR ENLARGEMENT.

This occurs early in most specific fevers, and yet is seldom looked for. Few doctors would examine a patient

for secondary syphilis without feeling the glands, and in rubella the cervical glands are usually palpated, but in all other specific fevers the condition of the glands in the neck, and still more in the axilla and groin, is overlooked. As a test for general glandular enlargement, the epitrochlear gland is useful. A general glandular enlargement does not necessarily distinguish between different specific fevers, but might help to differentiate between pyrexia due to them and that due to other causes, such as gastro-enteritis.

(2) Prodromal Rashes.

Urticaria is a prodromal rash which does not help our diagnosis. Some people are very liable to this eruption, which may be due to gastric disturbance or the onset of specific fever alike.

In *measles* a useful prodromal rash may be noticed if a suspected child be stripped and examined in a good light. Before the appearance of the typical exanthem there is a fine, sparse, papular eruption over face, chest and back. Professor Thomas, of Leipsic, says that it is around the papules of this prodromal eruption that the later rash appears.

At the onset of *varicella* there is occasionally a diffuse scarlatiniform rash to which attention was recently drawn in the *British Medical Journal*. It is said to be differentiated from the eruption of scarlet fever mainly by the absence of a papular element. In a case which I saw recently this was not so; at any rate, not over the whole of the eruption.

A child displayed a diffuse scarlet eruption, which included the face but left out the circumoral zone. There was a papular element on the arms, but not on the trunk. This, together with an examination of the throat and mouth which revealed a general redness of the mucous membrane and no circumfaucial injection, seemed to negative scarlet fever. With the eruption there were a few large papules over the trunk, back and front. Next morning the papules had changed to

vesicles, the erythema had gone, and the case was typical varicella. Other cases of varicella in the house assisted the diagnosis.

(3) Examination of the Throat and Buccal Mucous Membrane.

In children this may be difficult, especially with an unruly child. No method of holding the child is taught in hospital, and it is only after some experience that each of us evolves his own. It impresses the mother not a little when the doctor gives accurate instructions for holding the child. An incorrect method of throat examination in a young and unruly child results in a very imperfect view of the fauces, or no view at all; and will also make the child regard as enemies all medical men who see it in future. Minor accidents also, such as laceration of lips, gums or palate, or the dislodging of a tooth, may occur. The method used for a child under 5 years of age differs from that used with older children. One assistant is necessary, and should be a woman. To be nursed by a man, even when he is the father, is sufficient to make some children scream with apprehension. The mother is the best assistant if she is not nervous. She sits facing the light and the child sits on her left knee facing forwards and to the right; the doctor stands in front of the child.

The sitting position is better than the recumbent, as it alarms the patient less, and does not increase dyspnœa. The mother's left arm passes behind the child's neck, forming a rest for its head, and her left hand grasps the child's left wrist between thumb and fingers. Her right arm similarly grasps the child's right wrist.

The tendency of the mother is to put the left arm too low, giving no support for the head. She may also grasp the upper arm, and thus allow the forearm dangerous play; or she may not grasp the wrist between the fingers and thumb, but put both fingers and thumb on one side, allowing the arm to escape. The patient's

head is steadied by the physician's left hand encircling the child's brow, his index finger lying on its left temple and his thumb on the right; and the encircling hand presses the head against the mother's arm.

It is important first of all to put the spatula or spoon in each cheek and look at the gums and mucous membrane of the cheek. Koplik's spots, spongy gums, or redness around the opening of Stenson's duct may be seen. Then the throat is looked at, and lastly the tongue, with the spatula turned sideways to keep the mouth open.

The examination takes considerably less time than to write a description of it.

A child over 5 years should sit facing the light. The assistant stands behind the patient, the physician on the patient's right. When the child is very unruly the physician stands almost straight in front and holds its legs between his own. The assistant bends over and grasps the child's wrists from above and behind, supporting the head between the arms and at the same time preventing the child from turning.

It is in the early diagnosis of measles that examination of the mouth gives most help. Koplik's spots occur in over 97 per cent. of cases of measles and are well seen in the pre-eruptive stage. The student rarely sees these spots until he is qualified and has to treat cases of his own. Rubbing or bumping heads with some comparative stranger, he strains alike his eyes and his imagination in an endeavour to see in the half-light of the half-opened mouth those spots the description of which he has so often read and so vaguely understood. I remember the pleasure of first seeing Koplik's spots and feeling sure of them. There appeared to be a few speckles of bread or some other food lurking in the cheek in the region of the lower molar teeth; but the speckles did not disappear on wiping the cheek, and there was no doubt that they were the spots.

A good light is necessary and they first look rather

like fine, pale, miliary tubercles, dotted over the inside of the cheek.

In *varicella* a careful examination of the mouth generally shows some signs of the eruption on the mucous membrane of the palate, cheek, or tongue. This may serve to distinguish the disease from strophulus, a very similar eruption that occurs on children during teething and is said to be only distinguishable from varicella by the fact that it recurs, while varicella does not.

A small practical point about the examination of the mouth at night is that it is better to use a head mirror if electric light is not available to shine into the mouth from in front. Otherwise the observer is very liable to burn his hair in an endeavour to see properly.

The following case illustrates some of the difficulties that may arise; it may serve to prevent others falling into a similar error.

It was at a time of epidemics and I was treating cases of measles, varicella and diphtheria. A child, aged 9, was brought up; he had been ill since the day before with a stiff neck and loss of appetite. He had an adenoid facies and a furred tongue and the throat was a little congested. The posterior cervical glands were enlarged all down the sternomastoid, and slightly tender; the enlargement was more marked above. Other glands were not enlarged. There was no rash, and there were no Koplik's spots. Temperature 103° F. There was no gastric disturbance, and the whole condition suggested the onset of an acute specific fever. The next day the temperature was 103·6° F. and there was complaint of a nasal discharge, and of "phlegm in the throat." A swab taken grew no diphtheria bacilli. The glands were as before. Measles was suspected, but there was no rash and no Koplik's spots. The next day the patient's condition was still the same. After a pyrexia, lasting four and a half days, I found the temperature quite normal, and from that time the glands began to subside.

This seems to be one variety of what is known as *glandular fever*. It is suggested in a recent paper that these cases are sometimes due to an acute inflammation of the pharyngeal tonsil without any faucial affection. This was probably the case here, and I have seen one

similar case, also in a child with adenoids, with a pyrexia that did not last so long. Adenoiditis would, perhaps, be a bad word to use.

It has been suggested that other cases of infectious glandular fever are really rubella with a slight rash. This seems an unkind suggestion, and to deny anything in medicine simply because one has not seen it is very dangerous.

Lately it is said that the blood in glandular fever shows a marked lymphocytosis.

CHAPTER XX

MUMPS

MUMPS is contracted by nearly all of us at some time in our lives. It is generally a commonplace and trivial disease, yet exceptional or interesting cases sometimes occur. Moreover, a large number of cases of any disease always provides food for speculation or reflection.

CASES WITH SYMPTOMS DATING FROM THE TIME OF INFECTION.

In specific fevers, with an incubation period of any length it may happen that the patient is ill all through the incubation period from the day of infection, and yet, after the disease had declared itself in the usual way, its course is normal in every respect. In measles this is so common that it should be mentioned in textbooks as one of the modes of onset. The following cases of mumps illustrate the principle :—

A boy of 4 was noticed to be ailing on October 31 and was kept from school. He was feverish and languid, lost his appetite, and vomited two or three times ; when seen by me he had a temperature of 101° F., and seemed out of sorts, but nothing could be found to account for the temperature, and I was driven to think it gastric in origin. Under symptomatic medical treatment the child improved in a few days, but a day or two later he was feverish again, and there was an irregular, erratic pyrexia until November 16, when he developed mumps, The course of the disease was quite ordinary, and the child recovered without complications. I learnt later that on October 30 my patient had had tea with another child who had developed mumps within a few days.

A boy, aged 6, was first seen by one of my colleagues after he had been feverish and ill for seven days. He had a temperature varying from 104° to 105° F., but no physical signs. For the three days my friend watched him the high fever remained, no physical signs developed and the diagnosis remained uncertain. The boy's parents then decided that a "specialist" should see him, so a consulting physician was called in and gave his opinion that the disease was typhoid fever. Two days later parotitis occurred, and the diagnosis became clear, for mumps was prevalent in the village. Convalescence was delayed by an attack of orchitis.

As in all observations made in private practice, there is a flaw in this record, and a lesser one in the former case, for mumps was very prevalent at the time and the date of infection was not certain.

It seems difficult to explain these occasional primary symptoms. It may be that the microbe multiplies locally at first, its spread limited by a local resistance; later on it breaks down this resistance, of mucous membrane or other tissue, and invades its host, after which it can only be eliminated when a generalized immunity has been developed. The toxins produced while the organism is localized do not affect most people, so they remain afebrile until the blood invasion brings the toxins into more intimate contact with the tissue. Some people however have a special susceptibility to the toxins produced locally, and show symptoms from the first. The toxins produced locally in diphtheria cause serious disturbance in all patients, and a general bacterial invasion is exceptional. There seems a marked difference between local and general resistance, and the two seem independent of one another. A patient with a high local resistance may have a poor general resistance when that is broken down, and *vice versa*.

Mumps without Parotitis.

Epidemic parotitis is a poor substitute for the name mumps, for the disease is a general one and includes tonsilitis, rhinitis and bronchitis; parotitis is only one symptom. In mumps, as in other specific fevers, it often

happens that when the disease is passing through a household, one or other of the family, while showing no characteristic symptoms, has a bad cold or a sore throat and cough. There is nothing to prove that this is mumps, but it probably is, for now and again the patient develops orchitis, or some other complication. Mirchamp says that if vinegar be placed on the tongue there is pain in one or other parotid if the disease is really mumps. I have not tried Mirchamp's test but rather doubt its efficacy, for some people in perfect health will complain of pain in a parotid gland if vinegar is placed on the tongue.

Pancreatitis.

This is not referred to in Clifford Allbutt's "System of Medicine," and yet it is perhaps the second most frequent complication of mumps. Owing to the position of the pancreas, however, it is not obvious unless a careful examination is made. The following case is an example :—

A boy of 4 was found on November 12 to have a subsiding attack of mumps; the swelling had begun on November 10. On November 16, the temperature again rose slightly, and there was severe vomiting, pain in the abdomen and headache. Examination showed general abdominal tenderness, especially marked in the epigastric region; under treatment the vomiting soon stopped and the boy recovered in about four days.

Pancreatitis may be a fatal complication. It is sometimes diagnosed as appendicitis. In subjects easy to examine, I have thought the pancreas could be felt occasionally as a tender swelling in the epigastrium.

Complications connected with the Nervous System.

Meningitis, meningo-encephalitis, temporary aphasia, hemiplegia, and localized paralyses have all been noticed but their exact pathology is not known, as they usually clear up in periods varying from a few days to several

months. Milder cerebral complications, such as delirium, hallucinations and fits, are met with.

A boy of 5 began an attack of mumps on November 28, 1910. He was more ill than might have been expected at the time, but recovered in six days, and had been up and about for two days when I was sent for because he had a fit. He was semi-conscious and had just vomited; the temperature was over 101° F., and the pulse rate slightly raised. For two or three days he remained semi-conscious, vomiting frequently and refusing all food. There was no sign of pancreatitis, and if I had not known that he had had mumps I should probably have diagnosed early tuberculous meningitis. Within a week he was about again, rather thin but otherwise none the worse for his alarming symptoms.

On August 27, 1911, I saw the boy again, and this time the complaint was that for the last eight days he was becoming blind and falling when he walked. He also suffered from headache and occasional sickness. He was very intelligent and answered questions well. He walked on a wide base, rather like a tabetic, and had a tendency to fall to the right; there was a slight left external strabismus but no ocular palsy. The optic discs showed double optic neuritis, going on to atrophy on the left side. The signs and symptoms therefore pointed to an increase in cerebral pressure, possibly due to a tumour. Treatment with iodides and mercury gave no improvement, nor did mercurial inunction help him. On October 6, therefore, I removed the portion of skull under the right temporal muscle, opened the bulging dura and replaced the muscle and aponeurosis. His sight improved a little. Within a few months he died suddenly, and autopsy showed internal hydrocephalus, due to matting at the base of the brain secondary to meningitis. There was no tuberculosis.

A boy of 9 had an attack of mumps on December 15. On the night of December 19, although his recovery had been hitherto quite uneventful, he suddenly became delirious. He was excited, crying out that strange people were in the room and that animals were on the walls. This distressing condition was unaccompanied by pyrexia and subsided in twelve to twenty-four hours, the recovery continuing without further interruption.

I have seen another case very like this one, in a girl of about 10, occurring during convalescence but lasting rather longer, also a case of nerve deafness, dating from a severe attack of

mumps. There had not been any otorrhœa at the time, so there was probably no middle ear disease, which might have travelled up the Eustachian tube, as happens in mumps, and indeed in any condition accompanied by sore throat. Nor could the disease have travelled up the facial nerve, or there would probably have been some facial paralysis.

These casual observations, in a limited experience, suggest that mumps has a greater predilection for the central nervous system than any other common infectious disease except influenza, although meningeal symptoms are encountered exceptionally in all specific fevers. Parotitis sometimes occurs in influenza, and it is to influenza that mumps seems most nearly allied; perhaps when the microbe of mumps is discovered it will be placed with the influenzal group of organisms.

Exceptional Cases of Mumps.

(1) *Epididymitis.*—Although the body of the testis is generally affected in the orchitis of mumps, sometimes the epididymis is the seat of the principal enlargement at first.

On November 15, I saw a married man, in the twenties; the epididymis was enlarged and very tender, the cord was also tender, the temperature was 102·6° F. There had been no parotitis, so that, in spite of the absence of any obvious urethral discharge and of his denial of the possibility of such an infection, I made the diagnosis of gonorrhœal epididymitis. In this I did his moral character an injustice, for by November 19 the pain, swelling and fever had almost disappeared. My remedies received an undeserved credit, and the recovery was uninterrupted.

(2) *Delayed recovery after a second attack of mumps.*—A little girl, aged 6, had had mumps in 1909. In November, 1910, she had a second attack and recovered slowly. Although not in good health, she returned to school in about three weeks. When seen on December 20, she had been suffering from vertical headache, sickness and loss of appetite for a week. The child was emaciated and ill-looking, although before November she had been well; there was no fever, and there

were no physical signs of disease. Convalescence was prolonged.

It is interesting that some people develop a very short resistance to certain specific fevers, suffering, for instance, from measles, mumps, or scarlet fever, two, three or more times, and yet have an apparently normal resistance to all other specific fevers. Such a fine defect in the mechanism of immunity makes us realize how very delicate and complicated this mechanism must be. Possibly certain fevers which cannot be definitely diagnosed, because they do not resemble any described fever, are due to an individual susceptibility to organisms which are not at all toxic to normal persons. There seem to be rare individuals, for instance, who are susceptible to the Danysz rat virus. A defect in resistance to influenza is well known. An attack may occur annually or biannually, or even monthly; sometimes in the original form, more often in another, so that, for instance, a cardiac or gastro-intestinal attack may follow a faucial one. Yet such people sometimes, without any obvious reason rapidly develop an immunity and after months of invalidism go for years without an attack.

(3) *Acute inflammation of Wharton's duct.*—A year old baby was taken ill on December 24, it was very fretful, saliva dribbled from its mouth, and the mother noticed a swelling under the tongue. On December 26 it was certainly feverish and fretful. There was a slight, not severe stomatitis, and the chief thing noticeable in the mouth was a sausage-like swelling of Wharton's duct. These ducts could be seen on each side under the tongue, as large as a thick lead pencil, œdematous but firm and very tender. The submaxillary papilla was erect, swollen and red. The submaxillary gland on each side was tender and swollen, but not so much swollen as usual in mumps. The whole condition got better in a few days under simple treatment.

I had never seen anything like this before, and do not feel quite certain that it was mumps. Nevertheless, the case occurred during an epidemic of mumps, in which slight enlargement of the papilla is common, and so on the whole this seemed the most likely diagnosis.

Treatment.

This is very difficult to write about, as the treatment of simple things requires a great deal of experience. All patients are given drugs in private practice, and it is difficult to judge their value. In cases of severe vomiting and in all cases of pancreatitis, alkalies (e.g., bicarbonate of soda with the carbonates of bismuth and magnesium), seem to give rapid and definite relief. Thermogene wool with a little spirit on it seems more successful than the usual ointments or other applications suggested in books; the stain left by the wool is not very lasting.

Cases of Parotitis causing Difficulty in Diagnosis.

The diagnosis of a straightforward case of mumps is easy enough, but when some abnormality of onset or of distribution occurs, it may be difficult, and is certainly more so than most students are taught to expect, especially in the absence of an epidemic. Possibly mumps is diagnosed more often than it occurs, for parotitis may be due to other causes.

During an influenza epidemic, a woman, aged 54, was seen on January 9, 1910. She had been unable to sleep for fourteen days. On January 8, she felt sick all day; at 2 a.m. on the 9th she was attacked with pains all over, and at 11 a.m. was seized with shivering. She was stout and florid, but looked ill; the temperature was 100° F and the pulse rate 84. The left tonsil was enlarged and covered with exudation; both parotid glands were enlarged and tender, especially that on the left side. The parotitis rapidly subsided, but convalescence was rather prolonged. During this epidemic of influenza, I saw two or three similar cases of parotitis.

A boy, aged 12, was seen on July 24, 1909; he had been ill two days with pains in the neck on swallowing. He looked ill, the pulse rate was raised, and the temperature was over 101° F. There was a diffuse tender swelling under the chin on both sides, and the skin was somewhat reddened. There was also a swelling under the horizontal ramus of the mandible on both sides, about in the position of the submaxillary gland. The

mouth could be well opened, but there was salivation. Wharton's papilla was swollen on each side, there was food débris round the teeth, and both tongue and fauces were œdematous. The child improved little for about five days, and then there was a flow of pus into the mouth and he rapidly recovered. I was not present at the time the pus discharged, but, from the subsidence of swelling in that position, I had reason to believe that it had discharged along Wharton's ducts, The case was a puzzling one and no cause for the adenitis could be found; there was no epidemic of mumps at the time, and bilateral submaxillary calculi would be unlikely.

A little girl, aged 3, was seen in July, 1908, having had a swelling on the left side of the face for one week. It was painful, but getting smaller; there were bad teeth, markedly enlarged tonsils and adenoids and a firm enlargement of the anterior part of the left parotid gland. Pus oozed from the duct into the mouth on manipulation of the gland. I had not seen so young a case of primary septic parotitis, and thought it might be a case of mumps which had suppurated. Early in October, 1908, the gland was still discharging pus and occasionally swelling. The child has been well since June, 1909.

CHAPTER XXI

MEASLES

MOST cases of measles come under the care of the general practitioner, who has better opportunity for making observations than many writers on this subject. Not only the patient, but indirectly the whole household as well, remain under his observation throughout the disease. Common as measles is, there are still some doubtful points connected with it, and every epidemic may bring some new feature. Unfortunately, during an epidemic the busy practitioner has neither the time nor the inclination to record his observations, and when the pressure of work is less, he often reads the observations of others, in an attempt "to keep up to date," instead of reflecting on what he has seen himself.

Experience of a number of cases in private practice and of a series of 100 cases observed from beginning to end during an epidemic in a country town, brought to light certain facts about the onset, the type of eruption, and the complications.

ONSET.

There is a form of onset in which symptoms are present from the time of infection, but the rash does not appear until the usual day.

The parents of an infant of 18 months were always solicitous about its health, and only took it out of doors in especially fine weather. When I saw the child there was measles rash one day old, and Koplik's spots were present. Fourteen days previously it had visited the next-door neighbour, whose child had had a "cold," and had developed a measles rash on the following day. The day after this exposure to infection, and thirteen

days before I saw the case, the baby vomited, and it had been sick on and off and had a "cold in the nose" ever since.

On December 1, I saw a little girl with red eyes, coryza, and Koplik's spots, but no measles rash. She was isolated, but on the next day, when the rash had come out, her sister, aged 3, vomited, was unwell, and sneezed continually. Koplik's spots were looked for but not found, and when from day to day they were not seen, and no rash appeared, it seemed probable that the case was one of measles without the usual skin eruption. On the 10th day, however, definite Koplik's spots were found; on the 11th there was diarrhœa, vomiting and epistaxis; on the 12th the rash appeared, and a typical severe attack of measles began.

A girl of 16, living in a village where there was no measles, paid a visit to a school in a distant town, on November 28. She felt ill next day, and on December 1 a doctor was called in. He found the patient "out of sorts," but was unable to make a diagnosis. Fourteen days later a profuse urticarial rash appeared which was attributed to eating pork; next day the urticaria faded and measles appeared. It was afterwards ascertained that two pupils of the school she had visited on November 28 developed a measles rash on the following day.

Dr. Goodall[1] considers the onset of symptoms in specific fevers at the time of infection exceptional, but I believe that in measles at any rate, it occurs in some 5 per cent. of cases. The symptoms appear soon after infection, or at any time before the appearance of the rash. This explains the apparent delay in the appearance of the rash in some patients, although it is true that in others the rash is actually delayed for a week or more after a normal incubation period.

From time to time I have seen definite measles without a rash or without catarrh. Coryza is not uncommon in other members of the household. Probably measles, like other endemic specific fevers, is spread by immune carriers. It is likely, also, that some of the patients with *morbilli sine morbillis* have had an unnoticed transient rash. In one of my cases no rash was noticed, although search was made daily, because of a suspicious

[1] *British Medical Journal*, August, 1907.

coryza; Koplik's spots were found, but disappeared again in two or three days.

Some patients recover after primary symptoms of malaise and catarrh at the time of infection, without developing secondary symptoms, just as some cases of syphilis are said to "abort" owing to the administration of remedies before the appearance of the secondary symptoms.

Symptoms.

As might be expected, these vary slightly in each epidemic. In my experience, *prodromal rashes* are rarer than might be expected from the literature. Two of my patients had an urticarial prodromal rash, one a general erythema without urticarial wheals, and a few showed the fine, papular eruption frequently described. In some this seemed to be the first appearance of a true measles rash of the fine type.

As is well known, general glandular enlargement is often helpful in the early diagnosis of specific fevers, and certainly occurred in several of my cases before the rash appeared, though rarely before Koplik's spots. The enlargement seems to depend to some extent on the rash; in some cases there was no enlargement at all until the rash appeared, in others there was irritation of the skin when the glands enlarged, as shown by constant scratching, and in others again the groin glands did not enlarge until the rash was well out on the legs, although the axillary and cervical glands had been enlarged for two days. That the enlargement is not entirely dependent on the rash but also on general infection, is shown by the fact that the spleen was palpable in cases of well-marked general glandular enlargement. In 4 per cent. of cases the spleen was felt at the height of the disease, but within a week it retreated rapidly beneath the ribs. The glandular enlargement not infrequently lasted well into convalescence.

Koplik's Spots.

A careful search for Koplik's spots in the 100 cases which come under observation at a sufficiently early date has convinced me that they are as constant as the rash; indeed, in one case they were present without the rash.

To see them and be sure of them requires some experience, for, on the one hand, they are difficult to identify until the medical attendant is used to their appearance, and, on the other hand, there are certain normal appearances in the mouth which may be easily mistaken for the spots. A good light is essential; anyone not quite familiar with them should look for them only in bright daylight. It may be difficult to examine the buccal mucous membrane carefully in a struggling child, but a proper method of holding it will avoid this difficulty. A tiny speck on the labial mucous membrane, about three-quarters of an inch below the parotid papilla, is seen in many mouths, and may be mistaken for a Koplik's spot, but it is, I believe, a congenital projection, possibly an accessory Stenson's papilla. Small white ulcers due to stomatitis may be mistaken for groups of spots.

With the outbreak of the rash on the body there is generally an accompanying stomatitis which reddens the whole of the buccal mucous membrane, sometimes at first in patches; in this general catarrhal stomatitis Koplik's spots rapidly disappear.

Occasionally this stomatitis causes peeling, so that the tongue looks like the strawberry tongue of scarlet fever.

In 2 per cent of cases petechial hæmorrhages in the mouth were noticed at an early stage of the disease, and made it possible to forecast a severe attack.

The character of the rash varies in different patients and may be roughly classified into fine, medium and course. The fine type is most likely to be mistaken for rubella or for scarlet fever, and the coarse, which often goes with a mild attack, may resemble a simple urticaria.

Although the mode of spread of the rash which is usually described is the commonest, in one case in three

the first appearance is not on the face, but on the buttocks and around the anus, whence it spreads slowly up the back before anything appears on the face.

Some books state that the " black measles " described in the later Middle Ages was probably hæmorrhagic small-pox. This may be true, but cases of black measles still occur.

In one of the following cases hæmorrhages were associated with a severe attack, and in the other with a mild one.

A small boy was seen on December 2 with an early measles rash and Koplik's spots. His infant brother was seen for the first time on December 11. The baby had been ailing since the day before, there was a nasal discharge, and I thought a few Koplik's spots. There was a pale fine papular eruption about the gluteal folds and buttocks. Two days later the buttock eruption had slowly spread up the back, and there were definite Koplik's spots in the mouth. The attack was very severe, the rash came out slowly, double otorrhœa and broncho-pneumonia supervened, and large black patches, due to ecchymosis, appeared on the buttocks and neck shortly before death, which took place on December 21.

A boy, aged 5, had been ill one week when seen on December 18. He had complained of headache, nausea and malaise. There were pyrexia, vomiting and diarrhœa, but no rash or Koplik's spots. The rash, which appeared on December 21, was slow in spreading and fine in type; on December 24, the eruption had become definitely purpuric over the legs and arms. Recovery was uneventful.

Complications.

Apart from the usual and well-recognized complications—broncho-pneumonia, laryngitis, stomatitis, diarrhœa, otorrhœa and conjunctivitis—there is a corneal complication which may have escaped description.

A boy, aged 7, whose rash was well out, had, in addition to the usual redness of the eyelids, so much photophobia as to suggest a corneal ulcer. On careful examination of the eyes by reflected light I found that the surface of the cornea was

not smooth but stippled; the reflection from the cornea looked like a reflection from wet, fine sandpaper. There was also a very slight haziness of the cornea. In ten days it was absolutely smooth again and there was no photophobia.

I have since seen this lesion in about 2 per cent. of cases and now always look for it when well-marked photophobia is present.

As the cornea did not stain with fluorescine its surface was apparently not abraded; the stippling may have been due to an irregular subepithelial collection of lymph (a corneal rash).

Diphtheria is considered the most common disease which may develop during the course of measles, and it is often stated that a membranous laryngitis or pharyngitis in measles is measles plus diphtheria. The combination is common, but the following cases show that all membranous laryngitis in measles is not diphtheritic, and I suspect that some cases diagnosed as diphtheria after measles are really coccal infections.

A girl, aged 3 years, and her brother, aged ten months were admitted to hospital with a fading measles rash and marked laryngeal obstruction. The girl had a membrane on the fauces while the boy had a greyish-yellow membrane on the lips, inner aspect of the cheeks and palate. Both patients also showed signs of extensive broncho-pneumonia.

At the autopsy it was found that the girl's false membrane extended down as far as the larger bronchi, and the boy's was even more extensive. Cultures taken from each patient before death grew only staphylococci and streptococci; no diphtheria bacilli were found even in the false membrane removed after death.

One family I saw had measles and varicella running through the household at the same time.

On October 30, a girl of 4 was seen on the fourth day of an attack of measles; her brother had an eruption like a fading varicella. On November 8, the baby, aged one year, showed a varicella eruption, and on November 9 it had also a typical measles eruption. But for the other cases in the family a correct diagnosis would have been difficult to make. The

boy developed a typical measles rash on November 9, and the girl, who had had measles, commenced on November 12 a severe attack of varicella with pocks on tongue, fauces and buccal mucous membrane, as well as on the edges of the lids and one on the conjunctiva spreading on to the cornea.

A complication mentioned in "Allbutt's System" is paralysis of the soft palate, which might be ascribed to a concomitant diphtheria. In the following case there was never any clinical evidence of diphtheria, although no bacteriological examination was made.

A baby, aged 9 months, had a mild attack of measles, and when the rash had faded the infant returned all its milk foods through the nose. There was a definite paresis of the soft palate which cleared up in about fifteen days.

Prognosis.

It is useful to be able to tell the parents of a child with measles whether the attack will be severe or not; and also to be able to foretell a special liability to broncho-pneumonia or some other complication. As measles is usually a mild complaint and quickly over, most authors do not dwell on the prognosis.

In my experience, when the rash came out slowly, a severe attack usually followed, while patients who had a profuse and rapid eruption did well. A copious eruption of Koplik's spots generally preceded a profuse skin eruption, and was, therefore, an aid to prognosis; the finer the type of rash the more severe the disease. Broncho-pneumonia occurred more frequently where the physical signs found at the first examination were mostly at the base of the lungs, or confined to one lung only. Some cases, with dyspnœa, slight cyanosis, and extensive signs in both lungs early in the disease quickly recovered, although the general condition seemed at first to warrant a guarded prognosis. One patient had an extensive eczema of the head and face, which I expected to be worse after the attack, but it was distinctly better; a week later, however, it relapsed and became worse than ever.

The immunity of infants under 6 months is well known, and the following case shows it in a striking way.

A family of ten, consisting of father, mother, and eight children, were living in two rooms. The three youngest children had not had measles. One of them contracted it, and the next day the mother was delivered of a sickly male child. In a few days the two other children had measles, but the baby never contracted the disease, although the three children ill with measles were sleeping in the same bed as the mother and baby, and the mother nursed the suckling baby and the fretful children alternately.

This immunity of sucklings has been explained by some experiments of Ehrlich on mice. A female mouse immunised to the castor-oil poison bore mice that were also immune, but whose immunity passed off in about forty days. The immunity passed off more quickly if the mother did not suckle the young mice; other young mice suckled by her acquired some immunity, which shows conclusively that the immunity of the mother is transmitted by the milk as well as through the placenta.

Treatment.

Most writers seem to regard the treatment of measles as of little importance apart from complications.

Poor mothers are often very careless with children suffering from measles, and it requires much eloquence to persuade them to take more care, and to keep the children warm. The equanimity that Osler preaches is an excellent general attitude for the practitioner, but every one must be prepared to lay this aside and use such means of persuasion as occur to him. One practitioner had such difficulty in persuading the mothers of a certain colliery village to take reasonable care of their children during a measles epidemic, that he told them that he would sign no death certificate if any child died, as it would be the mother's fault. The threat of an inquest was the most effective means of persuasion he could find, and for the children's sake the means was justified.

CHAPTER XXII

SURGICAL SCARLET FEVER

A LARGE number of children suffering from burns or scalds develop all the signs and symptoms of scarlet fever within a week of the injury. This is so common that it must be recognized as one of the complications of severe burns. Some obvious questions are :—

(1) *Does surgical scarlet fever occur with other lesions besides burns ; and why is it so frequent with burns?*

(2) *Why does scarlet fever occur and not measles or chicken-pox, or some other equally common disease?*

(3) *Is "surgical" scarlet fever really scarlet fever?*

(4) *If scarlet fever, is it infectious?*

(1) Apart from burns, surgical scarlet fever is most commonly met with after operations on the nose, throat and ear, as the following cases show :—

(*a*) A girl aged 19, in good general health but suffering from recurrent nasal polypi, had her middle turbinated bones removed and the ethmoidal regions curetted on May 20. On the 23rd there was malaise and a temperature of 101° F. On the 25th a punctate erythematous rash appeared on the body and there was a severe sore throat; the pulse-rate was 156 per minute. On May 29 the girl was sent to a fever hospital, where she rapidly recovered from what was considered a mild attack of scarlet fever.

(*b*) A gentleman of 38, of stout build and robust health, had some polypi removed from both sides of his nose under cocaine and adrenalin. Next day he felt unwell and had "a cold," but he thought this might be due to the effects of the cocaine. Two days later the temperature was moderately raised, he complained of a bad sore throat, and a generalized erythematous eruption was present. Typical scarlatinal desquamation followed.

(*c*) A boy aged 14 with a mastoid fistula had a complete

mastoidectomy performed. Three days later he was ill, with a temperature of 102° F. The following day he developed an erythematous eruption, and an attack that was considered to be a mild scarlatina subsequently ran the usual course.

(*d*) A boy of 17 suffered from nasal obstruction, and pieces of the inferior turbinated bones and a pad of adenoids were removed under a general anæsthetic. He developed scarlet fever in 36 hours, and subsequently died from the disease. It is possible that his death may be partly attributable to the sudden and tragic death of his father, which took place about the first day of this illness, for these surgical scarlet fever cases are usually mild.

(*e*) A child of 5 had an operation for the radical cure of a left inguinal hernia. Thirty-six hours after the operation some infection of the wound became manifest, for there was a slight rise of temperature and swelling and tenderness in that region. Next day a bright red eruption spread over the body, starting from the wound, and a typical attack of scarlet fever followed, with a sore throat and a "strawberry" tongue. The peeling also started in the region of the wound, and spread thence over the body.

Surgical scarlet fever, therefore, may occur after any injury or operation; it is most frequent after burns, and next most frequent after operations on the upper respiratory tract.

(2) Why does scarlet fever occur, and not some other endemic disease?

Severe burns do occasionally give rise to other diseases, especially pneumonia, though of course scarlet fever is far more common, because it is more easily inoculable, and the germ is harder to kill than that of other diseases.

(*f*) A medical man, aged 38, who had had scarlet fever as a child, made a partial autopsy on a case which had died from a deep cervical abscess following scarlet fever. The evening after the autopsy a scratch on one of the fingers of his left hand caused pain and swelling. Next day there was considerable inflammation of the finger and hand, lymphangitis of the arm, and adenitis of the axilla, and within thirty-six hours of the autopsy a generalized scarlatinal erythema was rapidly spreading over the body from the site of infection. A typical attack of scarlet fever with typical desquamation followed. No other case was traced to this patient.

(*g*) A series of scarlet fever cases occurred in a certain house, and in some of them cervical suppuration followed, and the glands had to be incised. The wounds were dressed with poultices and strips of linen. After use, the strips were washed by a careful mother and put in a drawer ready for the next emergency. A year later one of the boys of the family, not previously infected, cut his finger with a bread-knife and was dressed by his mother with one of these linen strips. An acute local infection followed, and then a diffuse scarlatinal eruption, about thirty-six hours after the dressing. In this instance, a case of scarlet fever next door and one elsewhere was traced to the infected boy.

Of other specific fevers (excluding erysipelas), small-pox and plague seem to be the only ones in which cutaneous inoculation is easy, though it may also be possible in diphtheria, varicella and influenza. The great similarity of burn and post-operative scarlet fever to typical inoculation cases, makes it probable that surgical scarlet fever is really scarlet fever. Any and every typical symptom may be produced in either case. Burn and post-operative scarlet fever both start as a "primary," local lesion and the rash generally spreads over the body: the peeling spreads just like the rash. Yet surgical scarlet fever differs considerably from natural scarlet fever, for the attacks are usually mild, frequently atypical, and rarely infectious, so that surgical scarlet fever is best regarded as a modified form of scarlet fever, just as "14-day" typhoid is a modified form of typhoid fever, and as varioloid and vaccinia are modified forms of variola.

(4) Two cases, in which no attempt to speak of was made at isolation, may throw light on the question of infection :—

(*h*) A child about three years of age had a severe burn and was admitted to the children's ward of a general hospital under my care. Four to five days later it developed surgical scarlet fever, and the question arose whether to consider it infectious and send it home, or to consider it non-infectious and let it stay. I decided to let it remain; it was nursed by the ward nurses and treated without any precautions whatever.

Other children talked to it, played with it and used the same toys from the onset of the disease until the child was discharged, shortly before the peeling was finished. No other case occurred.

(*i*) An ill-nourished child of about 2 was under treatment for rickets and well-marked tetany. Through some inadvertence, the mother upset the contents of a boiling saucepan into the child's cot, and an extensive scald resulted, for which the child was admitted to hospital. Surgical scarlet fever supervened and, as there was no fever hospital in the town, the child was discharged from the general hospital and returned to its family. The family occupied two rooms of an insanitary house and none of the other four children had had scarlet fever. Moreover the patient was entirely dependent on the attentions of an alcoholic mother and adequate isolation was quite impossible. Yet the child made a good recovery and none of the others contracted the disease.

At a general hospital these surgical scarlet fever cases are usually sent to a fever hospital at once, although there is occasionally some delay when the diagnosis is uncertain. A few years ago some cases of scarlet fever occurred, traceable, it is said, to a case of surgical scarlet fever. They were sent to different hospitals where some were rejected because the diagnosis was considered incorrect, and some were accepted. From contact with the rejected ones, other scarlet fever cases of normal severity occurred.

We may therefore say that surgical scarlet fever is, for practical purposes, not infectious, but when the rare infections do occur the type of disease is mild, though it may become more severe after passing through a few susceptible subjects. It should not be necessary to isolate cases of surgical scarlet fever, but merely to treat them with "typhoid precautions," or, at most, to use the method of oil inunction recently revived by Dr. Milne. Dr. Eric Gardner, of Weybridge, tells me of an interesting case of surgical scarlet fever:—

A child had been out of a fever hospital for about eight weeks, after a severe and very definite attack of scarlet fever in which all the rest of the family participated. An accident

occurred and a piece of skin, about eight square inches in size, was burnt off the child's arm. Three days later the child developed a typical and intense scarlatiniform rash and a typical tongue, but no very definite sore throat.

This was a burn scarlet fever, a surgical scarlet fever, yet it seemed highly probable that the child would be immune so soon after a severe attack of ordinary scarlet fever. It is possible that an immunity to a faucial attack might not render a patient immune to an attack through the skin. This is not so unlikely as may appear at first sight, for an immunity to bee stings can be acquired on the arms if stung frequently, and yet the face may be affected by stings just as much as other people's arms would be; or the face and arms may be immune to stings and not the body. Again, a cardiac or gastro-intestinal form of influenza may occur in a patient who has just recovered from some other form of the disease. Recent work on the different organisms which may cause scarlet fever seems likely to elucidate the problem.

CHAPTER XXIII

TWO CASES OF ENTERIC FEVER

THE first patient was a man aged 50, of middle height and average physique. He was taken suddenly ill while at work on December 4, with pain in the back, chilliness, malaise and nausea. The symptoms did not ameliorate next day, and I was sent for on December 7. He had a furred tongue, a moderately rapid pulse, a temperature of 100° F. and some bronchitis; the absence of further physical signs suggested "influenza." He received the usual treatment for influenza, the pyrexia subsided in two days and on December 12 he went back to work. On December 15 he ceased work because of a recurrence of symptoms. On December 16 he was about and already much better. The relapse did not seem to have been serious and I did not see him again until December 25, when a second relapse occurred. He was again looking ill, but there were no further physical signs and the temperature did not reach 100° F. He was ordered to remain strictly in bed for a week and then take a country holiday, but he felt well and got up for a little after five days' treatment. On January 5 a recurrence of pains, malaise and depression again drove him to bed. Now began a long illness with periods of pyrexia for a few days, the temperature ranging to 102·3° F., accompanied by a densely coated tongue, a rapid pulse, nausea, occasional vomiting; and alternating apyrexial periods lasting two to three days, when the tongue cleared and the appetite improved. For some time there were no physical signs beyond those already mentioned, and influenzal septicæmia seemed the most probable diagnosis.

On January 10 his wife was taken ill suddenly.

About January 22 the patient felt severe pain in the right loin, much worse on movement, and micturition was painful and frequent. There was much tenderness on palpation of the right kidney, the urine contained $\frac{1}{10}$ of albumin, pus and granular and hyaline casts. A few days later there was some pain in the left kidney. It now seemed probable that an influenzal nephritis had developed, but the illness remained puzzling; there was extreme weakness and considerable emaciation. The patient's life was obviously in danger.

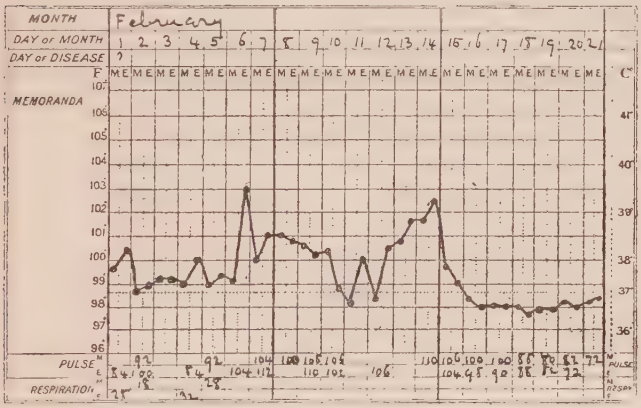
On February 1 he was sent to hospital. His wife, on February 2, yielded a positive Widal's reaction, but his reaction was uncertain, and the Medical Officer of Health, therefore, asked me to defer my notification. The illness continued in hospital as outside, but on February 10 the M.O.H. reported that Widal's test was positive in both patients. I was driven then, thus tardily, to diagnose enteric fever; although "typhoid" precautions had been taken in hospital from the day after admission.

The figure opposite shows the temperature chart of this patient while in hospital, with the alternating pyrexial and apyrexial periods.

A slow convalescence began on February 16 and continued with some interruptions. The patient was allowed up on March 14 and left hospital on March 23, able to walk feebly but extremely emaciated. The kidney tenderness disappeared in the later days of February, and about March 1 the urine contained no albumen. From March 23 to April 12 the patient gained 12 lb. in weight and was feeling better, except for swelling of the ankles at times and occasional headaches and night sweats. Between April 12 and 16 he lost 2 lb. in weight and suffered from malaise and muscular pains. On April 20 he felt better again.

In the absence of Widal's reaction the diagnosis of enteric fever would have been difficult, if not impossible, and in the absence of a second and more positive Widal the diagnosis would still have remained doubtful. It is

true that the patient gradually reached a typhoid state, but his mind was clear throughout, the spleen was never felt, no typhoid spots were observed and the stools were never typical of enteric fever. He is a good example of an ambulatory case, and one which helps us to realize that an infection with a specific fever may lead to anything, from no symptoms at all to death within forty-eight hours, and that between these every intermediate condition may occur. Ambulatory and apyrexial forms of enteric fever are well recognized, but ambulatory



scarlet fever, measles and influenza are not described in books, though well known to all who have much to do with infectious diseases.

The patient's wife, a woman of stout build, was taken suddenly ill on January 10, at 4 a.m., with pain all over, headache and sickness, but the chief complaint was sore throat. When examined next day she seemed very depressed, had a temperature of 101° F., a pulse rate of over 100, a congested pharynx and signs of some bronchitis, but no other physical signs. A daily pyrexia

up to 102·6° F. lasted till about February 4; the throat was better in about fourteen days. About February 1 great pain was complained of in the forearms, hands and neck, and there was slight effusion into the right knee-joint. An eruption next appeared on the forearms, neck, face and conjunctiva, and over the anterior aspect of the knees. The eruption consisted of irregular, roughly circular patches of diameter varying up to 3½ in. The patches ran one into the other, they were much raised, exquisitely tender and of a dusky purplish red colour, like erythema nodosum. They quickly began to fade, but subsequently the skin peeled over the affected areas in large flakes. In about fourteen days the arms were well. The great pain of the eruption prevented sleep and reduced the patient's strength more than anything which had occurred previously. There was a swelling on the left ocular conjunctiva towards the outer canthus, about ¼ in. thick and ½ in. in diameter, accompanied by general redness of the conjunctiva, pain and lachrymation. The episclera was involved, I thought, but no iritis supervened.

Convalescence was interrupted by severe joint and muscular pains which by April 20 had not yielded to treatment. The pain in the fingers was followed by a definite development of Heberden's nodosities, not noticed before.

This case again seems a curious medley of symptoms. There was no typhoid eruption, nor was there a change in the stools, but typhoid was diagnosable from the general condition, continued fever and the two positive Widal reactions.

The early sore throat may have been due to the mode of infection, which was clear enough in this case, for up to the time of her illness she had insisted on sharing her husband's bed.

A similar skin eruption had occurred some six years previously, and the patient was then told it was "rheumatic." The disease lasted for six months, on and

off, during which time she was under continuous treatment. It may be that the enteric fever lowered the resistance and allowed the outbreak of the other trouble, to which my patient was predisposed. I find two-thirds of a line in the article on typhoid in Osler's "Practice of Medicine" referring to this: "E. exudativum, E. nodosum and urticaria may be present"; but I find no record of a similar eruption attacking the conjunctiva.

The joint pains and osteo-arthritic manifestations furnish food for thought on osteo-arthritis generally. Were they due to the typhoid bacillus or to some other organism? Joint pains had troubled the patient from time to time before this attack, but never to such an extent, and Heberden's nodosities had not been present till this illness.

CHAPTER XXIV

SOME DIPHTHERIA DEATHS

No disease met with in private practice provides so many surprises or so many opportunities for serious errors of judgment as diphtheria. No disease calls for such prompt decisions or necessitates such rapid changes of opinion as diphtheria. Some cases may appear trivial when first seen, but the wider the practitioner's experience the more he appreciates the universal seriousness of the disease. To all of us comes the successful cure of a case that might have died but for our resourcefulness, and to some of us also comes the case that might have recovered had we been more resourceful. Because the latter are the more instructive I give this account of some diphtheria deaths in my own practice and in that of friends or acquaintances whom I know well enough to vouch for the accuracy of their stories Some patients were lost because they did not carry out instructions, others because the instructions were not good enough, and others would have died, perhaps, in spite of the very best instructions and the very promptest treatment.

Case 1.—On January 16, I was called to see a charming little girl, 8 years of age, the only surviving child of working class parents. She had been ailing for about two days and the parents thought she had a sore throat, though she did not complain of it. The child was rather pale and the pulse rapid, about 110 per minute; the temperature about 100°F. There was not a well-defined false membrane, but I thought the throat looked suspicious of diphtheria and determined to have a swab examined and to inject antitoxin. It was a strenuous day, and to make matters worse it was stormy, and the roads

were almost impassable. At 7 p.m. a call came to a case of retained placenta ten miles away, and since no motor could be found to make the journey I set off at 9 p m. in a two-horse barouche. I first went three miles out of the direct way to inject this child with 2,000 units of diphtheria antitoxin and to take a swab. I saw her again on January 18; she still appeared well and happy, but had a definite and well-marked diphtheritic membrane, and her pulse was more rapid than before. I gave 4,000 units of antitoxin, not without some misgiving about ever being paid for the drug. At my next visit, on January 20, the membrane was loosening. On January 22 the pulse was very rapid and feeble and the child was vomiting, though the membrane had almost gone. Danger was obvious, and I administered strychnine and brandy. Next day the child was rather worse and died the same night.

The first lesson from this case is to carry out what is usually taught, and give antitoxin *early* and *plenty of it*, never less than 8,000 units for the first injection. Had I done this the child might have recovered. I have done it since in spite of occasional bad debts, and have taken to giving concentrated serum, two phials of 4,000 units each; it is expensive but worth it.

If the membrane shows no sign of detachment, give more serum *soon*, within 24 hours at any rate, for the longer the membrane remains the greater the danger from toxæmia.

I did not then know the value of suprarenal extract; had the little girl been plied with suprarenal she might have recovered.

Case 2.—On the afternoon of October 3, 1911, I was called to a cottage two miles away, to see a 10-year-old boy, who had been taken ill that day. His mother told me he was very hot and restless and had been delirious. He had twice been ill in the same way before, and had got better after passing some roundworms. The boy was obviously very ill; his temperature was 106·6° F. and his pulse rate about 180 per minute; he was restless and delirious, but there were no obvious physical signs of disease in the chest or abdomen; the throat was congested, but no more. I made the provisional diagnosis of "worm fever" and prescribed a calomel and santonin powder, and a

harmless mixture. Next day he seemed very much better; he was bright and happy, his temperature was about 100° F. and the pulse-rate a little over 100 per minute. The bowels had been opened but no worms had been passed. I did not examine the throat that day, but congratulated myself on a successful diagnosis and expected to hear about the worms later.

I saw him again three days later, on October 7, when he seemed no better; the temperature was over 100° F., and the pulse rather more rapid than before. He made some complaint of a sore throat, and I found the fauces covered with a diphtheritic membrane. I gave him 6,000 units of antitoxin within three hours, and on October 10 he had another dose of 4,000 units. He appeared to make a good recovery, but all my attempts to keep him in bed, and all my threats to the parents if he did not stay there, were unavailing. About October 17 he developed a paralysis of the soft palate, and I was then able to keep him in bed for a few days, after which, when the boy and his parents were used to the paralysis, warnings were again disregarded, and he was allowed to get about the house. Recovery seemed to be taking a normal course, and on November 7 he was crossed off my visiting list, after some final injunctions to the parents.

On November 16 I was informed that he had been out and had caught cold, and had lost the use of his legs; he was also very short of breath. I found the child in a desperate condition. He was lying in bed and gasping for breath, the lower and to a lesser extent the upper limbs were paralysed. The abdominal muscles, the diaphragm and the lower intercostal muscles were not acting, and, with the exception of one sternomastoid, the neck muscles were also paralysed. Large doses of strychnine proved of no avail, and the child died next day.

Was this a case of diphtheria only, or were there other toxins at work? Probably there were other toxins as well. It may have been a case of worm fever and diphtheria and the two diagnoses may have been correct. Certainly the "catching cold" about November 13 or 14 seemed to cause a sudden exacerbation of the post-diphtheritic paralysis. Perhaps it might have been possible, with more violent language and more assiduous visiting, to persuade the parents of this spoilt and wilful

child to keep him in bed. Certainly this case shows that even the most trivial case of post-diphtheritic paralysis should be kept in bed, and is not free from danger until the paralysis has disappeared.

Case 3.—Occurred in the practice of a colleague, a man of ability and an honest recorder of facts. He was called to see a child one evening because it had a sore throat. The child did not seem very ill; the throat was carefully examined, and nothing was noticed beyond a little congestion. "Has the child got diphtheria?" asked the parents. "No, it has not," replied my friend. He reassured the parents, prescribed, and went home. About five days later he received a visit from the child's father, who told him he had made a terrible mistake about the child: it had died of diphtheria. It came out that, two or three days after he saw it, the child had become much worse, and another doctor was called in who found the throat full of membrane, and there was no doubt about the diagnosis. The second doctor was a man of known integrity, my friend interviewed him and found the father's story substantially correct.

Such cases forbid scoffing at another's diagnosis. The position was a difficult one for my friend, and yet apparently unavoidable. The only moral is: when asked, "Is it diphtheria?" it is better to reply, "There are no signs of diphtheria at present," than just a bald "No, it is not."

Case 4.—On January 24 I was called to see a woman of 26, whom I had seen, but not professionally, two or three times during the week preceding her illness, for she had been nursing a friend whom I was treating for influenza. She had been suffering for three or four days from "a tight chest" and a headache. She did not look very ill, but her face was slightly cyanosed, and she had a husky laryngeal cough; the pulse rate was over 100 per minute, the temperature about 101° F. It seemed probable that she had caught her friend's influenza, and she was given medicine on this assumption. Next day the diagnosis seemed confirmed, for her breathing was less distressed but the pulse rate and the temperature remained about the same. Towards the evening of this day and during the night, however, the dyspnœa became much worse, and on calling

next day I was shown a complete membranous cast of the trachea which she had coughed up. Her colour was paler and bluer, there was still dyspnœa, the pulse rate was more rapid, the temperature only 99° F. It became necessary to alter the diagnosis, and she was injected with 6,000 units of diphtheria antitoxin. The injection did not bring relief and the dyspnœa next night was so urgent that laryngotomy was performed. This brought some relief for a time, but only for a time, and it became evident that the obstruction was in the bronchi as well. A feather would pass easily down the trachea from the tube without even exciting a cough, and attempts at suction from the trachea were of no real benefit. She died on January 26.

The case was a difficult one. It is possible that 8,000 units given at first might have saved her, for the effect of antitoxin may not be seen for 24 hours after its administration. A correct diagnosis was however impossible at this stage, for there was no faucial membrane. A laryngoscope would no doubt have revealed it, but I had not one with me and the case did not seem urgent enough to go home and fetch one.

Death occurred partly because the patient would not cough, so that secretion kept collecting in the trachea, and had to be removed by suction. Possibly the sloughing of the tracheal cast had in some way dulled the sensory nerve endings of the trachea.

If this was, as was proved bacteriologically, a case of diphtheria, it may be asked what was the influenza case she had been nursing? I think the first was a genuine case of influenza, but that it may have predisposed my second patient to diphtheria. A mild tracheitis and laryngitis may have prepared the way for diphtheria, just as a bad smell may set up a sore throat, which paves the way, now and again, for a diphtheria infection, though there were no diphtheria bacilli in the smell itself. The reason of the "drainage" sore throats I cannot discover.

Case 5 was a boy of 11, a very nervous child. I was sent for on September 13 because he had had a fit; for a few days previously he had had a cold, and had been worse this day. I

had treated him over two years before for double otorrhœa. He was evidently just recovering from a fit. He was feverish and lethargic, his breathing sonorous and irregular: he replied weakly to simple questions, but did not perform simple requests. The left pupil was greater than the right, but both reacted normally; the knee jerks were diminished on both sides. Next day there was no sign of the fit but there was marked laryngeal obstruction, which seemed to me so serious as to make a tracheotomy necessary before further examination. A fellow practitioner was called in and advised expectant treatment. By this time my opinion had become so decided that I did not care to carry out expectant treatment myself, and so handed the case to my colleague and withdrew.

At 2 a.m. on September 18, I was again summoned, and found the boy only just alive, breathing very feebly and without stridor. A neighbour was fetched to hold a candle, and tracheotomy was performed, after which antitoxin was injected. The patient died at 11 a.m. There never was any membrane visible on this boy's fauces, but definite pieces of membrane were coughed up through the tracheotomy tube.

An early injection of antitoxin and an early tracheotomy would probably have saved this boy, yet the case was so deceptive that my colleague and the parents were satisfied at first with the relief afforded by the usual expectorants.

This case also showed the false improvements which sometimes take place in laryngeal diphtheria. The condition of the patient gets worse, the toxæmia is more intense and the struggle for breath diminishes; the stridor also gets less as the chink in the larynx narrows and the volume of air passing through is diminished.

Cases 6 and 7 were brother and sister, aged ten months and 3 years respectively, admitted to hospital with dyspnœa, a membranous condition of palate and fauces, and a cutaneous rash resembling measles. Both had urgent dyspnœa, a low temperature and a rapid pulse when first seen; after a time their breathing seemed to become less distressful. Both were dead within twenty-four hours; no antitoxin was administered.

The problem in this case is whether the whole condition was due to measles or diphtheria, or both. The

early laryngitis of measles, occurring just before or about the time the rash is seen, is said never to be fatal; but the late laryngitis, seven to fourteen days after the rash has gone, is more serious, and is often due to an added diphtheria. This could only be the early laryngitis, for the rash had just appeared. Was the condition then a pure diphtheria? Rashes do occur, though rarely, in diphtheria, apart from antitoxin rashes, and are generally either erythematous or urticarial. At the autopsy there was a membranous stomatitis and laryngitis, but no diphtheria bacilli were present on the membrane. It would be a curious coincidence, moreover, if a rare rash occurred in a brother and sister affected with the same disease at the same time. My belief is that the cases were measles with a membrane due to the measles organism or some concomitant parasite, and not to diphtheria; but as there was ground for doubt they are included here. I have also seen a non-diphtheritic membranous laryngitis in a case of renal disease that died with an empyema.

At that time inexperience and perhaps also some lack of observation led me to think there was less laryngeal obstruction when it was really getting worse. The only chance for these children was immediate tracheotomy.

Tracheotomy.

Perhaps intubation of the larynx is the best treatment; but I have not seen much done in private practice or general hospitals. Moreover, intubation is certainly not suitable for private cases unless an expert nurse can be in constant attendance. In all the cases given here the diagnosis was confirmed by bacteriologist or pathologist.

The operation of tracheotomy is very urgent and often difficult. It has to be done at times and under circumstances that may be very disadvantageous, and yet the margin of error allowed is very slight. Unlike an appendicectomy or the radical cure of a hernia, it

allows little room for delay, mistaken decision or faulty technique. Any error may mean the loss of the patient's life, and yet the operation is generally performed by those who have not had much surgical experience, or do not, at any rate, operate frequently. It is not surprising therefore that the mortality among unpublished cases is very high. The deaths and causes thereof may be classified under three headings :—

Group 1, the largest: *patients operated on too late.* The doctor sees the case too late, or delays operation in the hope that it is a simple croup, or that the membrane will be coughed up, or that antitoxin will cure. It is important to remember that laryngeal diphtheria in young children without a tracheotomy was nearly always fatal before the days of antitoxin. Luckily, antitoxin does generally give relief. If a child has no urgent dyspnœa it is best to inject antitoxin, 8,000 units at least, and wait twenty-four hours. If there is no relief by that time tracheotomy should be performed.

Group 2.—*Patients whose death is due to other causes than the laryngeal obstruction*, and who die in spite of a successful tracheotomy. The causes of death are varied. There are the toxæmic and the severe double infection cases, sometimes with cutaneous hæmorrhages ; it is difficult to save these. More exceptional are the cases where, after tracheotomy, the bacilli seem to get into the blood stream and cause a diphtheritic septicæmia directly traceable to the operation ; they are also hard to save. Then we have the disappointing cases which die of broncho-pneumonia, possibly due to the diphtheria bacillus, or of some other pulmonary complication, some days after the operation and long after the tube has been removed. Others die because membrane, below the tube or loose in the trachea, cannot be coughed out. One patient lost through this cause might have been saved had I used an ear syringe and fine catheter to suck out membrane. To leave the tube in too long occasionally proves fatal. I have seen a case of tracheo-œsopha-

geal fistula where a bivalve tube has been left *in situ* for eight days. This was very nearly fatal, but prolonged and careful attention saved the patient's life.

Group 3, *deaths directly due to the operation.*—There are many different ways of operating, most of them, no doubt, equally good. I favour the rapid method, relying on the sense of touch and independent of light or swabbing. Occasionally this may lead to disaster, but it is probably the best all-round method, for delay is one of the chief causes of failure. I once did a most successful tracheotomy using this method, by candle-light, with a pair of StClair Thomson's quinsy forceps for tracheal dilators and a battered lobster-tail tracheotomy tube one size too large for the patient. In this case a slower method would certainly have proved fatal.

A too-small skin incision is a fruitful source of trouble, and a too-small tracheal incision is, next to delay, the commonest cause of disaster. Hæmorrhage, again, may prove fatal; a great deal may occur without harm, but to nick the innominate vein is disastrous. Not infrequently death occurs, for some reason, after the tube has been inserted and the doctor has left the house. It is a great relief after an exciting operation to see the tube in and the child breathing, but it is a mistake to leave until the passage seems quite clear and *everything* all right. If the tube is too short it must be removed and a rubber extension added to it or a rubber tube inserted, otherwise surgical emphysema will increase the difficulties tenfold in half an hour. A tube that is only partly in the trachea will give similar difficulties.

Case 9.—A boy of 14 was admitted to hospital on April 6, 1903. Three weeks previously he and other members of his family had had sore throats, which were not diagnosed or treated as diphtheria. For one week swallowed fluids had returned through his nose. There was paresis of the soft palate, complete on the left side, partial on the right. The pulse-rate was 60 per minute, the pulse was feeble and a little

irregular. There was a slight, but noticeable. periodic respiratory rhythm. Strict rest was enjoined. On April 28, while reaching for milk from his locker, he suddenly died.

In this case the paralysis seemed trivial, but he had two signs of grave import: a slow pulse and an irregular pulse. He did not feel ill, and such conditions are difficult to treat properly in children, who do not understand the danger of sudden movements.

Case 10.—A medical man with whom I am acquainted injected a young diphtheritic child with antitoxin, and then sent it straight away to the fever hospital in the waiting ambulance. The child had not seemed very ill, but died on the way: it seems very likely that death was due to the antitoxin. A patient of mine very nearly died after an antitoxin injection, and certainly would have died if I had left the house at once and not stayed to boil my instruments.

A boy of 3 was ill, and had the diphtheria bacillus in the throat, a bad sore throat, and epistaxis, though no visible membrane. He received 8,000 units of antitoxin in the back, and struggled very much during the administration. Five minutes later he vomited whilst his father was nursing him. He became deathly pale, his eyes turned up and no pulse was detected at the wrist. The child was placed with the head below the level of the body, hot bottles were procured, brandy given by the mouth, and, within a few minutes, adrenalin chloride in suitable doses. In one hour he had recovered, but the subsequent antitoxin rashes, beginning on the third day, were very severe.

It is certainly best to use a concentrated antitoxic serum, which was not done in this case, and in future I should always watch a child for about ten minutes after the injection.

This ends my lugubrious story of deaths and calamities. The array is a dread one, but I hope it will be more useful than any series of successful cases, and that it may save others from making similar mistakes.

Intramuscular injection of antitoxin is swifter in action than the subcutaneous method and might have saved some of the patients. But Schick's work bids fair to

revolutionize our treatment of diphtheria. An attempt should be made to immunize every child between 2 and 12 years of age by the injection of toxoid antitoxin mixture. The labour involved in a preliminary Schick test seems hardly worth while. Useful antitoxic serums are also available for scarlet fever, although methods of immunization are yet uncertain.

CHAPTER XXV

MIXED CASES

So many interesting and rare diseases are buried undiagnosed that it is a relief to be able to publish some cases where there was, ultimately, some human certainty of the diagnosis. The mistakes narrated cannot prevent others making similar errors, but may assist their judgment in cases that are similarly difficult.

(*A*) *Strangulated direct inguinal hernia, with gonorrhœal epididymitis, vasitis and vesiculitis on the same side.*

Early in 1906, on a Sunday afternoon, I was asked by a fellow practitioner to see a boy, aged 20, with a swelling of the right testis and cord. The boy lived with his widowed mother, whom he partly supported, and it was extremely difficult to obtain a reliable history of the case. We were told there had been some malaise and illness for a week or ten days, then a swelling gradually appeared on the right side of the scrotum and spread upwards until, in about twenty-four hours, it reached the groin. The patient could not eat a good Sunday dinner, and vomited in the afternoon; the bowels had not been open this day. He denied gonorrhœa, but his great reticence made the denial unimportant; he did not remember ever having had a rupture, but his grandmother told us he had had one as an infant. There was also a history of an enlarged testis a year before, which got better without treatment in fourteen days.

The boy seemed ill, his temperature was just under 100° F., and the pulse-rate about 80 per minute. There was an enlargement of the right side of the scrotum and

a fluctuating swelling round the right testis suggested a hydrocele, but it was not translucent. All the tissues of the right cord were thickened, and there was a continuous swelling up to the external abdominal ring, but no discoloration of the skin, no impulse on coughing, and not much tenderness on handling the swollen structures. To light percussion there was resonance, I thought, at the upper end of the swelling. *Per rectum*, the right vesiculus was enlarged and rather tender; there was no urethral discharge, but some balanitis.

Was there a hernia or not? Should an operation be performed or not?

After much consideration I diagnosed acute thrombosis of the pampiniform plexus of veins, or, possibly, acute tuberculosis of the testis. We acted on this diagnosis and gave a hypodermic injection of morphine, while a lead and opium lotion was applied to the affected testis.

Next day the patient seemed better. There was no increase in the pulse-rate and there had been no vomiting since the previous day; but there had been no action of the bowels and no flatus had been passed, though the abdomen still seemed normal. So the case remained perplexing. If our diagnosis was correct we should give an aperient; if there was a hernia, this would be wrong. I thought it over again, made up my mind that the testicular condition was the cause of his troubles and gave him five grains of calomel. This was followed by copious vomiting, much pain and much internal rumbling. It became obvious that something must be done, so the boy was sent to hospital. Operation revealed a strangulated direct inguinal hernia, the epigastric artery being on the outer side of the hernia; epididymitis was also present with a hydrocele, and in a few days a definite urethral discharge was noticed. The patient was very ill for a time, but ultimately did well.

It is easy to be wise after the event, but even now it is difficult to see clearly how we could have avoided our mistakes. The resonance over the base of the cord was

a sign that we ought to have thought more valuable than we did, perhaps; but then the co-existence of the two conditions which were found did not occur to me, and, for once, the rectal examination led me astray. When in doubt, operate, seemed to be the lesson of the case.

(*B*) *Strangulated left femoral hernia, accompanied by subperitoneal fatty hernia, and followed by abdominal influenza, in a patient with mitral stenosis.*

On February 26, 1910, at 6.15 p.m., I saw a lady, aged 29, with symptoms of intestinal obstruction. She had been attacked at 1 p.m. with violent pain in the abdomen, and had vomited twice since. There had been several previous similar attacks, but much less severe, and she told me that there had been a lump in the left groin for two years, since the birth of her only child. She was very stout, but a small tender swelling was felt in the left groin, resonant on percussion and with no impulse on coughing. After a careful examination I diagnosed a strangulated left inguinal hernia, and was able to reduce part of the swelling, with relief of symptoms. No effort succeeded in reducing the rest of the swelling, so I concluded that the remainder must be a piece of irreducible omentum. Operation was advised and arranged at a time suitable for the patient, about ten days later; in the meantime all went well. She had mitral stenosis, left after an attack of rheumatic fever when a girl, and she had also an old ruptured perineum, with partial prolapsus uteri, and a vaginal discharge.

On March 7, at 4 a.m., she was again suddenly attacked with abdominal pain, described as "like the old pain," and chiefly epigastric; she vomited once. When seen at 8.20 a.m., she was pale and in pain: the temperature was 100·5° F., the pulse-rate 84, and the arterial tension low. The abdomen was not distended but was generally tender, and there was the same swelling as before in the left groin, neither hard nor

tender, easily reduced to the same extent as formerly, but not completely reducible. It seemed best to watch the pulse-rate and general condition carefully, and to be prepared to operate at a moment's notice, for it might be a piece of strangulated omentum or an ovary, or even a twisted appendix epiploica.

The pulse-rate increased and the pulse became poor, the abdomen became more tender and there was more vomiting. At 2 p.m. the pulse-rate was 112, at 6 p.m. 124. An enema given by a nurse at 3 o'clock gave no satisfactory information. The temperature at 6 p.m. had risen to 102° F. Many things pointed to the desirability of local operation, followed by abdominal exploration if nothing of importance was found in the groin, but the patient had mitral stenosis and the pulse was poor. The husband, moreover, had been under treatment for ten days with typical influenza, and well-marked cardiac symptoms, so I decided at 10 p.m. to go on watching. Next day the vomiting ceased, the pulse-rate dropped to 112, the temperature to 101° F., and an enema gave a good result. Towards evening a copious eruption of herpes labialis appeared and anxiety ended.

On March 9 the temperature and pulse became normal, and operation was performed on March 15. It was a little humbling to find that my inguinal hernia was after all femoral, in spite of all the care I had given to the diagnosis. There was another surprise waiting, for, after isolating what appeared to be a piece of omentum which would neither pull down nor go back, I cut into the middle of it and towards the base found a small, empty hernial sac. The irreducible omentum was really only a subperitoneal fatty hernia.

The patient did quite well except for slight suppuration of part of the femoral wound, due to the vaginal discharge, or to some defect in technique

So the dogma, "When in doubt, operate," must not be taken too absolutely. It would have been a mistake in this case, and probably a serious one, but it was an anxious time, with the irreducible portion of the hernia

persisting and also the possibility of having reduced a piece of perforated gut.

To mistake a femoral for an inguinal hernia in a fat subject is perhaps not difficult, as the femoral opening gets pulled out of its place to face in the same direction as the inguinal ring. This seemed a more serious mistake to me when I was a house surgeon than it does now. I cannot yet see how to distinguish between the subperitoneal fatty hernia and the irreducible omental hernia.

It really seems unfair of Nature to introduce all these complications into the same case.

(*C*) *Abdominal influenza with attempt at procuring abortion in a non-pregnant uterus.*

It happened that a young married woman, aged 22, with one child, suddenly realized that her duty to her sex was more important than her duty to her husband. So when two menstrual periods had been missed, and it became possible that her work would be interrupted again by Nature, she sought advice from an elderly woman, and was shown how to inject a very hot permanganate of potash solution through the softened lips of the pregnant cervix uteri. After some discomfort and a few days' rest in bed, this was followed by a return of the normal menstrual periods.

Later on a period again became a week overdue, so the patient had resort to the same remedy. Great pain in the abdomen and vomiting followed and there was painful micturition.

I first saw her on the evening after this attempt. She looked ill and agitated and had vomited recently. The pulse-rate was 150, the temperature 101° F., the abdomen moved well, but was tender all over, especially in the hypogastric region; the vulva and vagina were stained black and were dry, harsh and tender to the touch. The os uteri was low down but not patulous; the uterus could not be palpated bimanually, but no perforation of the vaginal wall could be felt. It was difficult to decide

whether a laparotomy should be performed or not; the uterine wall or the posterior fornix might easily have been perforated by the nozzle of the syringe. I decided to watch and wait, diagnosing, for the moment, localized pelvic peritonitis due to hot water in the posterior fornix, though I felt the temperature had risen too quickly, and the pulse was too rapid for this to be the only damage.

Next day the temperature was still a little raised and the pulse still rapid. The temperature fell in about four days and the patient made a good recovery. Herpes labialis appeared about the second day of my attendance, and the husband came under my care for an attack of influenza about six days after my first visit. Menstruation recommenced normally about three days after I started to attend, and before leaving the case it became obvious that there was no pregnancy and never had been.

The sequence of events seemed to be an influenzal infection causing delay in the onset of menstruation and an attempt at abortion just at the very time when the effects of the influenza became apparent.

If it be asked what is abdominal influenza? one can only reply that it is a special form of acute abdominal disease occurring when one of the influenzal group of diseases is prevalent. It may be due to a mild infection of the bowel or peritoneum with the pneumococcus, *B. influenzæ*, or some other organism, but it gives rise in others to a disease which is clinically influenza, and may itself arise from cases which are clinically influenza.

It is difficult to realize how many women attempt at one time or another to procure abortion, and the medical profession seems to know but little of the ingenious means tried or of the different drugs administered with this purpose.

(*D*) *Pseudopneumonia.*

On December 19, 1908, I was called to attend a man aged 42, who had been ill about twenty-four hours. He

complained chiefly of a painful cough, malaise, and pain in the front of the chest. A few days before his little daughter had been attended for a fairly typical attack of lobar pneumonia.

The man looked ill, the temperature was 102° F., the respirations were 26 per minute, the pulse-rate 90 and the sputum was moderately copious but typically "rusty" in appearance. Signs of a generalized bronchitis were discovered and there was a diminished air entry at the base of the right lung, with some loud medium crepitations in the same position. The history of the case, the patient's appearance, the sputum and the physical signs all pointed to pneumonia; and acquaintance with the infectivity of pneumonia, especially in unhealthy houses, supported my belief. None the less, the facts did not warrant a final opinion, so I said nothing of my suspicions to the relatives, but the usual treatment for pneumonia was adopted. Next day, to my surprise, the symptoms and signs were subsiding, the temperature was almost normal, and the sputum no longer "rusty." The case soon proved to be merely one of generalized bronchitis with a copious bronchitic sputum.

The patient was a steel worker, and I learned that his work for the few days preceding the illness had been entirely among dry old iron, and he had been compelled to inhale clouds of red rust for the greater part of the day. The irritation of these particles gave rise to the bronchitis, and the sputum was not "rusty," with inverted commas, but really rusty, coloured with small particles of oxide of iron. This surmise was confirmed microscopically.

(*E*) *Hot-water Bottles.*

It is not sufficiently realized what a dangerous medical instrument is the common rubber water bottle. We have all seen many cases of serious burns during sleep or under an anæsthetic. In the post-mortem room I

once saw on the leg of a subject, dead from some other cause, a large ulcer which was being demonstrated by the physician who had had charge of the case as a curious trophic ulcer. Doubts were passing through my mind when the assistant pathologist, now a distinguished surgeon, whispered to me, "What about a hot-water bottle?" From the position and appearance of the lesion there seems little doubt that his suggestion was correct.

One evening it fell to my lot to operate on two cases of strangulated hernia in male infants, aged 6 and 9 months respectively. The elder baby was ill but its condition good, while that of the younger was desperate. The operative accessories seemed of the highest importance, and when the elder child came to the table it appeared that the hot water bed was getting colder, and I removed the covering, after feeling the temperature carefully with my elbow. After operation the baby's whole back was found blistered. The sickly child recovered but the elder died, more from burns than from the operation.

The lesson is that on no account should the flannel covering of a hot application be removed where in contact with an anæsthetized patient, and that the hand or elbow, after dabbling in hot water for half an hour or more, is not an instrument of precision.

CHAPTER XXVI.

MINOR TUBERCULOSIS

Two decades of collective effort to eliminate tuberculosis justifies an attempt to review our conception of the disease.

The Victorian conception of tuberculosis may be summarized: "A fatal disease; when recovery ensues the diagnosis should be revised." Then came what might be called the Edwardian conception: "A widespread disease as a pathological finding, but always dangerous and often fatal when causing symptoms." I would like to formulate a Georgian conception: "A widespread disease terminating usually in uneventful recovery among the highly resistant majority of the population, but dangerous to a minority with low resistance."

Minor tuberculosis, that is tuberculosis as manifested in the highly resistant majority, occurs at one time or another in the lives of 40 per cent. of human beings. In busy private practice I often noted patients with one or two symptoms suggesting tuberculosis: a cough, wasting, lassitude, "run down," weakness, chest pains, or sometimes hæmoptysis. Often there were also a few suggestive physical signs. Under observation the symptoms almost always passed off, but occasionally an individual patient developed typical phthisis pulmonalis. As Tuberculosis Officer, following in their homes the lives of some thousands of contacts, I am convinced that this minor tuberculosis is very real, and that recognition of its existence will clarify our ideas on tuberculosis, smooth out some differences of opinion among able observers, and perhaps provide a key to the whole problem.

A few instances may be given:—

(1) During the spring of 1916 a medical man of 38 was rejected for war service because an examining board detected pulmonary tuberculosis. The patient was tall and thin with sloping shoulders, the type described as "homo popleus." He had worked hard during the winter, and had suffered during the last few months from a troublesome cough. His weight was 3 to 4 lb. below normal, and he had lately found work more tiring than before. There was a slight atrophy of the right upper trapezius with perceptible drooping of the shoulder. Dullness, diminished expansion, and a few crepitations were noticed at the right apex, and a few crepitations were also heard on the left side. The patient did not cease work, but took a few common-sense precautions, and has continued with no recognizable symptoms since the summer of 1916.

(2) A medical man of 51 was seen in the summer of 1918. He had felt ill and run down lately, and his habitual morning cough had become worse; there had also been fugitive chest pains. Ten days previously there had been a morning hæmoptysis of 3 oz. The patient was pale, thin and rather haggard-looking; a few physical signs were present at the left apex, and dullness, with some pleuritic crepitations, at the right base. I pressed him to take a holiday; he refused, but became much more careful than in the past. At 59 he continued frail, but there had been no further symptoms of importance, and he was still in active practice.

(3) A doctor's daughter and lady dispenser, aged 23, came for advice because she had expectorated a mouthful of blood; there was also a dry cough, occasionally troublesome. The patient's father had died from tuberculosis, and a few years previously she had nursed and slept in the same room with a cousin who subsequently died of phthisis. The patient was active, frail and thin with a slight stoop; there was dullness at the right apex and a few crepitations were heard at the apex of the right lower lobe. It was difficult to decide what advice to give; she was allowed to continue work under observation and an improved régime. Four years later she married, and remained well after twelve years of married life, during which she bore three children.

(4) A school teacher, aged 26, had signs and symptoms suggestive of tuberculosis, and the sputum, on the one occasion that it was obtainable, contained tubercle bacilli. A short holiday and a few adjustments were the only treatment. Fourteen years later she continued to work regularly without symptoms.

Among children tuberculous manifestations are also common; e.g., failure to thrive, prolonged pyrexia, gastric troubles and sometimes cough. The following history, sometimes heard in chronic adult pulmonary tuberculosis, illustrates the difficulties which occasionally arise:—

(*a*) As a child, prolonged pyrexia labelled typhoid, rheumatic fever or influenza.

(*b*) From 15 to 20, tonsils removed for bad health, perhaps more than once.

(*c*) About 22, an attack of pleurisy.

(*d*) At 24, appendicectomy.

(*e*) At 28, all teeth removed, and perhaps a course of vaccine therapy.

(*f*) At 32, phthisis diagnosed.

The suggestion that the great majority of pulmonary tuberculous lesions discovered at autopsy have given rise to symptoms during life is borne out by experience in other diseases. A large percentage of autopsies reveal gall-stones; it was once thought that most of these had been symptomless, but now that we are beginning to recognize the symptoms which they cause, it seems probable that very few cases, if any, are really symptomless. They constitute a proportion of those dyspepsias which it is the lot of general practitioners to treat. The duodenal ulcer which perforates without previous symptoms is also becoming a great rarity now that the symptomatology is better known.

There is a tendency for symptoms to go unrecorded, and sometimes unnoticed, when their cause is unrecognized. The study and co-ordination of such symptoms are essentially the scientific province of the general practitioner.

The existence of minor tuberculosis is increasingly recognized. Some would speak of latent tuberculosis, but this does not seem the best word when symptoms are present. Others call the condition a tuberculous infection, as opposed to tuberculous disease, but the difference between the two is of degree only. To me, minor tuberculosis seems a better phrase.

Once the condition is fully recognized, it must modify our work and teaching in many directions. Statistics are incomparable when one observer includes minor cases and another only the graver ones. In conjugal tuberculosis, for instance, if minor disease is included, an infection will be found in the majority of cases, but if our attention is limited to major cases, occurring in the 2 per cent. of the population who have low resistance, conjugal infection becomes rare. Similar remarks would apply to any estimate of infectivity in tuberculosis, and to sanatorium statistics. If the patients sent to sanatoria are always to be "early" cases a number of minor cases will be included, and these could quite well be treated at home. For practical purposes, sputum-positive cases are all major, so that statistics based on sputum tests are comparable; but these constitute only a portion of the tuberculosis literature.

Besides minor disease, two other factors modify our conception of tuberculosis: (1) allergy; (2) other pulmonary infections.

Koch's phenomenon is well known. A guinea-pig infected for the first time with tubercle bacilli may die of the disease but show no local signs at the site of inoculation. If, however, after a sublethal dose of bacilli a second injection is given, there is a violent local reaction which often results in sloughing. The animal is said to be in a state of allergy. Tulloch and Munro have shown that by thus sensitizing a guinea-pig we may simulate the fibro-caseous phthisis of human beings. It seems likely that the easily-recognized, typical phthisis of man is the result of some such sensitization, the pathological and clinical pictures depending largely on the degree of allergy. Therapeutically, just the right amount of allergy should be our aim, so that there will be a reaction at the site of infection, but no breaking down.

Inseparably connected with the tuberculosis problem are other forms of pulmonitis, especially pneumococcal infections. Tuberculosis disposes to catarrhal infections

and these dispose to tuberculosis. This, indeed, is the greatest difficulty in diagnosis. We read strongly-worded opinions that patients with bronchitis must not be called tuberculous, and opposing views are also held. A way out might be found by speaking of "catarrhal pulmonitis" and "tuberculo-catarrhal pulmonitis." In the diagnosis of pulmonary tuberculosis the chief erroneous tendencies are, on the one hand, in patients only slightly ill, to diagnose minor tuberculosis as something else and, at the other end of the scale, in patients obviously ill, to diagnose chronic pneumococcal infections as tuberculous.

CHAPTER XXVII

THE INCARCERATED GRAVID UTERUS

THE story is told just as it happened, to give some idea of how such cases present themselves to the practitioner who has not had a special gynæcological training.

At 3.30 a.m., on December 4, I received a note from one of the nurses of the local institute, a nurse who had the C.M.B. certificate and also an extensive experience of midwifery. The note was in pencil, and ran as follows: "Will you please come as soon as possible, Mrs. B. has been in labour for some hours and seems in a bad way. I can't make out what the presentation is. There is a big tumour in the vagina, and I can't feel the os at all." On the way I pondered on what might be the matter. The tumour in the vagina might be an ovarian cyst or a fibroid obstructing labour; something would have to be done—tap the cyst or enucleate the fibroid perhaps. Anyhow, I hoped sincerely that Cæsarean section would not be necessary before morning. Mrs. B, a primigravida, aged 23, had been married a year and thought the child was about full term. Her pulse was rapid, the tongue dry, and there was great œdema of both legs and of the back. The abdomen presented an oval swelling which reached to the ensiform cartilage, suggesting a pregnant uterus. I examined the swelling sleepily but carefully, and at some length; the examination was interrupted from time to time by "labour" pains. The swelling was hard and of uniform consistency, and no fœtal parts were felt; the nurse told me that the whole time she had been there the uterus had remained hard, and she had noticed no alteration in

its consistency. Although I listened intently over the swelling for ten minutes I heard no fœtal heart. I tried to recollect similar conditions and the possibility of concealed accidental hæmorrhage or of tonic contraction occurred to me. I did not venture to speak to the nurse, and the silence remained unbroken, save for the usual reassuring remarks to the patient.

The os uteri could not be felt, and the vagina was completely blocked by a firm swelling, which appeared to be in the rectum. The finger could not be passed between the swelling and the anterior vaginal wall, and it seemed probable then that the bladder was full: for the purposes of diagnosis, therefore, a catheter was passed. One hundred and twenty ounces of urine were withdrawn and the oval abdominal swelling disappeared. I was now able to feel the os uteri with some difficulty, high up anteriorly, and to arrive at a correct diagnosis.

I had found previously, in the treatment of similar cases, that the uterus was not difficult to push back with the patient in the knee-elbow position, and I have even replaced these uteri in the receiving room and sent the patient to the out-patient department. In this case, however, the uterus could be pushed up easily enough, but came slowly back into the retroflexed position. I therefore gave instructions to pass a catheter twice daily, and decided to try reposition with an anæsthetic.

The following day, with the patient under chloroform, the cervix uteri was seized with a volsellum and the uterus pushed up repeatedly to the proper position, but it returned each time, quietly and slowly, to the pelvis—almost like the fœtus in an examination for ballottement. The practitioner helping me agreed that this must be a congenital retroflexion Nothing further was done and the pregnancy continued, though the cervix had been somewhat lacerated and the manipulations prolonged. A catheter was passed twice daily for about ten days; at the end of that time the bladder was able to empty itself normally again, though the fundus uteri remained in the pelvis as before. The œdema of legs and back subsided thirty-six hours after the urine was first drawn off.

On January 5 I was again called to this patient and found her sitting up in bed somewhat distressed and dyspnœic. The temperature was 102° F., the pulse-rate 130, the respiration 35. Examination of the chest revealed a diminished air-entry and a somewhat impaired note at the base of the right lung. Suspecting encyopyelitis, I examined the abdomen and confirmed the diagnosis. There was rigidity of the abdomen, especially on the right side, and pain and tenderness on palpating the right kidney. The left kidney was also affected, but to a lesser extent; the urine had the usual characteristics. Under treatment with urotropine this condition improved in a few days, and my note of January 9 states that the temperature was 99·8° F., respiration 30, pulse 120, tongue clean, pain on palpation of both kidneys still present, but no abdominal rigidity. On February 8 the patient was up and fairly well, and had no urinary trouble of any kind. There was no ascertainable pelvic deformity. The uterus reached just above the umbilicus by the abdomen, but the fundus still remained in the pelvis. In the later months of pregnancy the uterus rose of its own accord, and about April 4 the os uteri was normal in position and the presentation by the vertex.

The child was born on April 25. When the placenta was expressed from the uterus I had an interesting experience. The placenta was extruded, and at the same time the uterus disappeared from the abdomen; no fundus was palpable in the usual position. A wave of anxiety passed over me, and I looked to see if there was any appearance at the vulva of an inverted uterus. There was not, and I suddenly remembered the retroversion and discovered that the uterus had fallen back to its old position in the pelvis.

The child was sickly and small at birth, but did well. The woman at the time of labour was extremely emaciated and ill-looking, owing to the prolonged encyopyelitis, but she put on weight rapidly and seemed quite well two months after delivery.

This case presents many features of interest:—

There was no complaint at all of any trouble with micturition. The patient complained only that her legs were swollen, that she was ill, and that she had pain in the abdomen and in the loins. On being questioned about the quantity of urine passed, she said too much was coming away and she could not retain it. The retention must then have been of some days' standing to allow of overflow. The absence of urinary symptoms, and the difficulty in ascertaining the date of pregnancy, made the diagnosis difficult without a careful examination.

The position which the uterus occupied in the pelvis, to which it returned each time after reposition, is of interest. Dr. Maxwell mentions it in a similar case. Galabin says that in some cases retroversion, in others retroflexion, is most marked; in this case sharp retroflexion was the chief feature. It seemed best not to introduce a pessary, as the pressure necessary to keep the uterus out of the pelvis would have been painful as well as harmful.

The recovery of the bladder function though the uterus remained retroflexed, the very rapid subsidence of œdema of the legs were also interesting. At this stage there was apparently no inflammation of the kidney and the œdema was purely mechanical.

The onset of encyopyelitis shortly after catheterization was discontinued is noteworthy, especially as the form in which it appeared was that which so closely simulates pneumonia.

The only menstrual period after the birth of this child was at the fourth month, and on February 4, 1910, I was called in the evening and found a distended bladder with a four months' pregnant uterus retroverted and incarcerated in the pelvis. This time it was possible to push the fundus up and maintain it in position with a ring, as the whole mass seemed softer and less elastic than before. Catheterization was necessary for a little time, as the bladder had lost tone; this was deputed to

a nurse, who complained once or twice of difficulty in placing the catheter correctly.

On February 11, I called at the house and found that Mrs. B. had just given birth to two four-inch fœtuses, male and female. There was no one present to help her, and her condition was not good. Manual removal of a very adherent placenta was necessary.

Two points in this latest incident were new to me:—

The softness of the uterus in the second pregnancy was much greater than in the first and made the retroversion a less serious matter.

The accidental introduction of a fairly rigid catheter into the os uteri instead of the urethra might cause abortion, and possibly did so in this case, especially as the ring held the patulous os uteri in a suitable position.

Eight days after labour, while out of bed straining at stool, poor Mrs. B. developed a right hemiplegia with aphasia and died comatose three days later.

The second case is that of a 10-gravida, aged 36, four months pregnant, seen in the evening of December 11. She complained that at 4 a.m. in the morning she got out of bed to pass water and strained, but could not pass anything. There was abdominal pain all day and a constant desire to micturate without ability to do so. In the afternoon incontinence of urine began and continued until I saw her. On examination there was an abdominal swelling, easily diagnosable as a full bladder, the cervix uteri was found at the vulva and the uterus was fixed low down in the pelvis. The bladder contained approximately 60 oz. of urine; when it had been emptied the uterus was replaced without difficulty. There was no retroflexion but the effort to micturate had forced the enlarged four-months' uterus into the pelvis, where it became fixed like the round glass ball in a soda water bottle.

This seemed to be a case where a pessary would be useful, so a rubber ring was inserted and removed five weeks later; in due course and without further trouble the patient gave birth to a full-term child.

CHAPTER XXVIII

SPONGE EDUCTION

THERE are certain cases of finger laceration in which a bare and protruding bone or extensive stripping of the skin, with denudation of the deeper parts, seems to render an amputation necessary at a higher level than the injury, so that the raw surface may be suitably covered by a flap. If this amputation is not done and the finger is dressed in the usual way, either with or without a preliminary treatment by baths, the ultimate result is unsatisfactory, for an ugly, useless, and often painful stump is left and a secondary amputation is generally necessary. There is, however, an alternative method, originating in America, which makes it possible to save the full length of the stump in most cases; frequently even *to lengthen the stump*, so that the soundly healed finger will be longer than the apex of the lacerated and ragged finger when first seen.

The method consists in covering the bare stump with a piece of sponge one half to three quarters of an inch thick, cut to fit the raw surface accurately. The sponge becomes glued to the wound, and blood-vessels and granulations grow into it from the finger end.[1] After a few days the sponge is pulled gently away from the finger, and its attachment to the granulations loosened; any small effusion of blood is absorbed by the sponge, and the granulations left behind lengthen and grow into

[1] Later it became clear to me that the method does little more than encourage a florid outgrowth of granulations, which may however be very useful. The sponge becomes matted and clogged with secretions and the granulations seldom really grow into it.

it again. After a shorter interval the sponge is pulled again, and this treatment is repeated until a thick pad of granulations grows up after the sponge, and buries the raw surface or protruding bone. When the granulations are sufficient, the sponge is removed and the wound dressed, first with fomentations, later with ointment or dry dressing: the granulations rapidly become covered by skin. This "leading out" of granulations by the sponge has been given the name "sponge eduction."

In addition to lengthening a finger stump, sponge eduction may be used to help to reform the pad over the terminal phalanx when this is torn away, and in one case, narrated below, the patient was able to play the piano with a pad so formed.

Case 1.—On January 27, 1909, a boy of 12 endeavoured to blow up with gunpowder a dead tree in the wood adjoining his native village. The powder exploded prematurely, causing extensive injuries to the whole of the left hand which was lacerated and burnt. There was a compound fracture of the middle phalanx of the middle finger, the flexor tendon sheath of the index finger was injured and in more than one place opened; of the terminal phalanges of the thumb and index finger only a denuded stump, with a few long spicules of bone, remained. For about ten days the hand was soaked for several hours daily in a lysol bath, and the ingrained dirt and powder were largely removed, then a sponge dressing was applied to the tips of the index finger and thumb. The sponge had to be renewed, and some spicules of bone came away in time but granulations grew well and a large part of the bone survived and formed a scaffold for the new finger.

The chief difficulty in treating this boy was his love of mischief. The hospital soon got tired of him; for a time I was able to treat him privately while he stayed at an aunt's house in the town, but every week the aunt declared she would shelter him no more, and every week I sent her away, pacified for the moment, with another week gained for treatment. At last, when the total treatment had lasted about two months and granulations had grown well, the aunt would suffer him no longer and sent the boy home to his native village and own medical attendant.

A few days later the mother brought him up again because

the doctor had removed the sponges, seen and misunderstood the exuberant granulations, and advised immediate partial amputation of the finger and thumb. The granulations seemed sufficient, so he was dressed without a sponge, and in some fourteen days both finger and thumb were healed. When he was seen again finally on June 3, 1909, the result was excellent, the fingers well healed, the bone well covered, and the stumps painless.

FIG. A.

FIG. B.

The figures A, B and C show the fingers as injured, with sponge dressing, and when healed. No attempt has been made to show the extensive general laceration present after the accident.

FIG. C.

Case 2 was under the care of my partner. A boy of 6 caught the right middle finger in a mangle and removed the soft parts covering the terminal phalanx, including the nail, leaving nothing but the attachments of tendons and the periosteum. The exposed distal phalanx was covered with sterilized sponge and the whole length of the finger retained. The boy had exhibited some early musical talent, and has been able to cultivate it further as a pianist.

Other cases in which this treatment was adopted are here illustrated from sketches made at the time I first saw them (fig. D).

Some details of the method used.—The sponge is a flat Turkish sponge, kept dry, but soaked in 1 in 40 carbolic solution for a short time before use; it is applied after hæmorrhage has ceased, or nearly ceased, and after the stump had been rendered as aseptic as possible. Outside the sponge the finger may be dressed with gauze; or it may be enclosed in jaconet as the granulations grow more rapidly if the part is kept moist. If there is a difficulty in maintaining the position of the sponge, splints may be used. It is dressed daily from the third day. The sponge is kept aseptic by dipping it in weak carbolic solution and squeezing it dry at each dressing.

Fig. D.

Limitations and Difficulties of the Treatment.

In an ideal case the secretions from the granulating surface should be sucked up by the sponge, and the finger-tip, where it grows into the sponge, should remain fairly dry, but sometimes matting of the layer of sponge near the finger prevents this drainage, and we find some pus underneath the sponge pent up by adhesion of the sides of the piece of sponge to the edges of the wound. In such cases the matted part may be cut away and the sponge re-applied, or, if necessary, a new piece of sponge may be used. If this fails, a satisfactory growth of

granulations may still occur in the moist discharge under the matted sponge. It might be suggested that a sponge is unnecessary, and a finger might be left to granulate under any simple dressing that is not often removed. The suggestion is true to a limited extent, and some fingers do granulate quite well with a simple dressing only, but sponge gives the best results in bad cases.

The method would not be successful if applied straight away to a dirty lacerated wound, but it can easily be used after treatment by baths has sufficiently cleansed the stump.

The method is usually painless, but in one case I had to amputate a very painful stump after treatment by sponge eduction had been carried out by another doctor. The rule is that these stumps are less painful than those left after a flap amputation.

In a clean case this method takes longer than the usual amputation. A disadvantage in a hospital out-patient department is that such cases take a good deal of individual attention, and it is impossible for a series of different dressers to take the same interest as one person in watching the growth of granulations, and guiding them to a sufficient length.

Further Possibilities.

The method can be applied to any wound where exuberant granulations are needed. A cavity in bone, for instance, after a tuberculous focus has been scraped out, may be filled up by "educed" granulations. It might also be used for mastoid operations when it is desired to fill part of the resulting cavity with granulations. This method has also been tried, successfully I am told, in ulcers of the leg adherent to bone. The ulcer is scraped, granulations educed, and the scar, when covered with epithelium, will no longer be adherent to the bone.

CHAPTER XXIX

AN EVENING WITH THE SPIRITS

I OWED this opportunity indirectly to a Chaldean priest, introduced to me by a mutual acquaintance, The priest had certain visions of the future which amounted to prophecy, and could also tell intimate details of any person by handling some small article previously handled by them. I took down all the prophecies in writing at once, and can now conclude that they were unreliable, which is disappointing, as he foretold some pleasant things. But there was an uncanny accuracy about the other power which impressed me and made further investigations desirable. This in itself is an interesting story, but here I will confine myself to the spirits.

The visit of the priest became known and I was interviewed by a medical colleague, an earnest and convinced spiritualist, who informed me that the priest was really a psychometric medium, exercising a power well known to spiritualists. We had one or two long talks; I endeavoured to understand his views and respect his beliefs. He was prepared to give a fairly detailed account of the next world and said that animals as well as men had souls and were to be found there.

"All animals?" I inquired.

"Yes."

"Crabs and lobsters, for instance?"

"Certainly."

"Slugs and snails?"

"Yes."

He told me that such animals had a sort of collective soul; 100 snail souls made something equal to one crab, perhaps 100 crabs one cat and so forth. Readers

can understand my temptation to carry this argument further, but my colleague genuinely believed and it would have been discourteous.

My view, briefly stated, was that although there are logical as well as subjective arguments for the existence of a God we have no real knowledge of what happens after death—there we are against a blank wall. If knowledge could be produced it would make a profound difference to all of us, and should be made known widely and at once. It was necessary, however, that before announcing these discoveries we should be sure of our facts; personally, I should not be prepared to believe on my colleague's unsupported word, or that of a medium, however inspired, but only on the production of phenomena that could be submitted to the senses, and their accuracy tested in the usual ways. My friend thought this reasonable, and that he might be able to arrange a séance by a well-known physical medium.

In the meantime he lent me a book by a Belfast doctor on various spiritualistic phenomena, and a journal devoted to the cult. The Belfast doctor had worked at the matter on scientific lines, he had attempted to measure the forces concerned in levitation by a spring balance and to find where the counter-action took place. It was very interesting, but the personality of the sitters suggested the possibility of collusion. I wondered how the results would have stood the scrutiny of a keener scientific observer using stricter controls.

The journal contained a number of unsupported statements, and I was struck by the portrait of a man, with the head of a 12-year-old child printed over it in two positions. The statement was made that this was a spirit photograph and the heads those of a twin miscarriage which the man's wife had suffered some thirteen years previously. The twins had continued growing in the next world.

At last one July day my colleague informed me that he had secured the medium. I obtained permission to invite a very observant old "Londoner," now retired; a

delegate from a learned Society was also present, and ten others, including three ladies. A successful retired tradesman and keen spiritualist, well used to séances, took a leading part—we will call him showman No. 1; a retired army officer, similarly convinced, was showman No. 2. The medium was a miner, aged about 28, short, thickset, and muscular, with fair hair but going bald. The Society's delegate I recognized as a Cambridge man of my year. For his Society I also made an independent report.

The four doctors present first examined the medium and his clothes. He wore a new blue serge suit. The coat fell to me; it had glissade lined sleeves and nothing in the pockets. He was a little diffident about removing his trousers—as one might expect a miner to be—and asked and obtained permission to retire.

We then proceeded to the séance room, where every arrangement had been made for complete darkness. The selected chair was rejected and replaced by one with open arms and back. Thick cord, $\frac{1}{2}$ in. in diameter, was provided to tie the medium. I noted that a standard method of binding was required, and we were asked not to tie him tightly. Two of those present were deputed to bind him. They seemed a little nervous, and their agitation was increased by the medium every now and again setting his muscles and gibbering loudly, which we were told was due to the spirit descending upon him. The medium chose a position forearms on thighs, hands on knees, thumbs uppermost. His arms and legs were bound to the chair over the clothes; then the Society secretary proceeded to overtie with wool and in addition to bind the thumbs together by wool passed over the knees. He might have done more, but the squirmings and mutterings increased and the showman asked him to hurry or the spirit might depart.

A circle was formed, or rather a horseshoe, the medium sitting between the extremities, each sitter grasping his neighbour's hand. I placed myself on the medium's right, having therefore one free hand. The secretary

was outside the circle with a camera for photographing spirit lights. Close to the medium was a curtained recess, with a light table on which stood various articles, a long megaphone, a bunch of sweet peas, a bell, a fan and a metal goblet. The lights were then extinguished.

The medium began to speak broken English in a guttural voice which we were told was that of Black Bull, an American-Indian chief dead some centuries ago. It reminded me of a German trying to speak English with a Welsh accent: "Mer gwine to do mer best" and "mer doing mer best," were the chief phrases. The sitters sang hymns. I listened. Once they attempted "Lead, kindly Light" to the tune of "Abide with me." Black Bull recognized the error, "Metinks it is de wrong toon." When touched by spirits we were to say, "Thank you, kind friend," or "God bless you."

The chief showman kept calling on various accessory spirits in a coaxing way. One of them was said to be a dead daughter of his. "Annie, come along; Annie, there's a good girl." His manner suggested to me a common family episode, calling in the household cat.

During the hymns the medium shouted and I could hear violent struggles taking place. Soon we were asked if we felt a spirit wind. It was as if someone were shaking the curtain covering the recess, and indeed the edge of it struck my left hand. Various manifestations then took place; my shoulder was touched, my leg was plucked, there was a feeling of three fingers pressing the acromion process. The flowers touched my chin and face, as did the goblet and the bell. The fan struck my knee, and finally the table moved towards the room and bumped my leg; I made way, it passed into the circle and overturned. The sitter beyond me and the one on the medium's left were also touched, but no one else.

Between the movements voices were heard. Black Bull noted a queue of spirits anxious to speak to me. Muriel, a girl of 17, was trying very hard to speak, but could not "crystallize her voice." About this time the side of the megaphone hit my forehead; shortly after:

"a doktor, an old friend, vants to speak to Dr. Vard. He died twelve years ago, from someting in the troat." I could not recollect him, but there was soon a sibilant sound about my left elbow and the megaphone gradually rose until a voice spoke in my ear, "Is that Dr. Ward?" "Yes, it is," I replied kindly. "I hope you are very well?" said the voice. "Thank you, very well." This closed my conversation with the friendly stranger. At one time there were thumpings as of a stockinged heel on the floor.

Black Bull told us he was making every effort to produce spirit lights, but the medium was becoming exhausted. This caused consternation among the showmen, and after a hymn, during which there was much writhing by the medium, the gas was relit to observe his condition. There he was, limp in the chair, his attitude strongly suggesting exhaustion. His eyes were closed, but opened momentarily to glance downwards when the light went on. All bonds and wool were in position except one tie round the leg and chair which had become loose. No one remarked on this, however, and the cord was removed.

At this point the medium suddenly rose, walked briskly up and down the room and said, with an American accent, "How are *you* all to-night?" "Tim!" exclaimed the habitués, and it was explained that this was the spirit of a New York Bowery boy. Tim had a reputation as a raconteur, and told a story with a medical flavour:—

"An American girl at the door of a doctor was asked by a passing priest if he could be of any assistance. 'No, thank you,' said she, 'I want one as practises, not one as preaches.'"

Tim saw a number of spirits about the room. He stopped before my friend Dr. X. and announced that a girl aged 15, named Muriel, was before him; she had died many years before from a chest weakness. "Consumption, I think you call it." Dr. X. collected his thoughts and replied: "In the course of my professional

career I have had to treat many female patients called 'Muriel,' but I am glad to say they are all still alive." Another member of the audience failed to identify the spirit of an elderly woman wearing a shawl and cameo brooch. So Tim retired to his chair and the medium recollapsed into a position of dramatic exhaustion.

Suddenly he became re-animated and limped briskly up and down the room, calling: "And how is everybody to-night?" "Peter!" cried the habitués, and we learnt that this was the spirit of a lame, but otherwise unidentified, Dutchman. Peter's turn was soon over and this time it seemed the séance was ended; the medium awoke with a shudder, passing his hand repeatedly over his eyes.

The showmen and others had previously discussed whether on awakening he should have a glass of milk, wine or water. The majority said "Water," so water it was. We adjourned for supper gratefully enough, for the night was sultry and the room close.

The experts' report and my own were made independently, but tallied. The whole affair was most unconvincing, and my conclusion was that the chief interest of the proceedings was the incorrigible credulity which they revealed. The medium chose the chair, the method of binding and his position; even then one leg had become unbound. The binding was made still less secure by movements while it was being applied, and the showmen's protests that the cord should not be too tight. The woollen thumb ties were applied with the extensor tendon tense, and, similarly tied, I found that by approximating the hands it was easy to free one thumb in a few seconds. Applied with the extensor tendon lax it took thirty seconds to work one thumb loose.

The key to the whole procedure was provided by showman No. 1, who narrated that on one occasion the spirits had stripped off the medium's coat and left it in the circle, while he remained coatless, but still bound, in the chair. He probably slipped one thumb tie, then took one arm out of his coat and commenced proceedings.

Later the other arm was released, followed by the removal of trousers and boots. Most likely he found it possible on this occasion to get out of one trouser leg only, so that touchings were limited to those in his immediate vicinity. With one foot he was able to thump the floor and produce the rappings. Finally he climbed again into the clothes with the bonds still over them.

Inspection of the trousers spoilt the spirit lights; no doubt something was secreted in them. Phosphorus matches rubbed on the palm of the hand would create quite a good glow to the dark-adapted eye, and by clenching and opening the hand the light could be made to appear or disappear.

The claim made subsequently of two simultaneous touchings and two simultaneous voices could not be substantiated. How is it possible to say under such circumstances that two touches rapidly succeeding one another are or are not simultaneous? When the medium is groaning and shouting, the audience singing, and voices speaking, one cannot be certain that two are speaking together. Personally, I did not hear two voices at the same moment.

The experimental conditions were absurd; our eyes were denied us, our ears were deadened by the hymns; our hands and feet were practically tied, for the hands had to be joined and feet kept under chairs. Yet under such conditions we were asked to make observations which were to revolutionize the world of thought

Physiological observations are often disbelieved when made under laboratory conditions. What would physiologists say if asked to conduct epoch-making experiments without the use of eyes, ears, hands and feet? The conditions of the experiment suggest fraud a priori.

A deceased medical friend (there are many, alas!) would surely not have addressed me as "Doctor Ward," but by some more intimate name; and would not have confined himself to banal generalities, but referred to some case or episode familiar to us both, which would at once have recalled his personality.

These remarks apply of course only to one series of experiments on one occasion. I am still open to conviction, but more sceptical than ever. Sir James Paget said (or if not he might well have done so) that the medical student's first care should be to learn *to observe, to reflect and to describe.* If this advice were generally followed there would be fewer convinced spiritualists within our ranks.

CHAPTER XXX

PAIN IN THE RIGHT ILIAC FOSSA

It will be agreed that most cases of obscure pain in the right iliac fossa are due to the appendix; if the pain is slight and constant it may be due to an appendix ulcer; if sharp and short, passing off in an hour or two or less, the cause may be some deformity which prevents the appendix from emptying itself readily. In any case the appendix usually causes the pain. There are, however, cases of pain in the right iliac fossa not due to the appendix.

Pain of Nervous Origin.

Case 1.—On October 27, 1911, I saw, on behalf of a colleague who was away from home, a gentleman aged 78 who complained of severe pain in the right side of the abdomen and especially in the right iliac fossa. He was not very ill, but complained that his food did not digest well. The pain came on suddenly during the night and kept him awake, but there was no vomiting; there had never been any previous pain in the same position. The tongue was slightly furred, the pulse-rate and the temperature were normal. There was tenderness on palpation in the right iliac fossa, but not much rigidity, and no deep tenderness was elicited. The patient was kept indoors but would not stop in bed, gastro-intestinal sedatives gave little relief. On the fifth day from the onset, after I had handed the patient back to my colleague, he informed me that an eruption of herpes zoster had appeared over the area of the eleventh dorsal nerve. The dyspepsia was probably a coincidence.

Under "pain of nervous origin" may be mentioned the "hysterical" appendicitis of the modern young man or woman, also the small painful lipoma over the right

iliac fossa that I once saw in a man between 40 and 50 years of age.

Case 2 is quoted as a contrast to Case 1. A retired workman aged 66 was attacked with abdominal pain in the right iliac fossa on November 5, 1912 at 2.30 p.m. He was not sick but felt very ill, the bowels were open shortly after the onset of the pain. He was about on November 6 but did not feel well and on November 7 he came to see me at the surgery, about a mile from his house. He thought he had had some pain in the same region before, but was not sure. He was bent and old-looking, and had pipe-stem arteries and a distrust of medical men. His pulse-rate was 72 per minute and his temperature normal, there was slight tenderness and a vague deep-seated swelling in the right iliac fossa. He refused to go to hospital in a cab, and walked another half-mile. He was put, protesting, to bed; an enema was given with good result, and he felt much better. The temperature remained about the same, reaching at highest 99·2° F., and the pulse-rate remained about the same for three days, after which it increased somewhat, and on November 12 reached 100 per minute.

I decided to operate, and at 11.30 a.m. an enema was given; which was followed by some collapse, shivering, abdominal pain and general discomfort. Operating at 5.20 I found the peritoneal cavity full of thin purulent fluid, and loculi of pus were in the appendix region and in the pelvis. In one loculus under the cæcum there was débris as well as pus, and also a piece of egg shell 1·5 cm. by 1 cm. This shell appeared to have ulcerated through the base of the appendix; the appendix itself was firmly adherent to the iliac vein, and could not be removed. Ileus followed the operation, and gangrene both of the abdominal and bowel walls. The patient died on November 17.

I was told subsequently that he kept hens and had one or two eggs for breakfast every day.

These two cases at first seemed very similar but the after-history was very different. No doubt it would have been better to operate on Case 2 at once, but he was such an unfavourable subject and was so much better after the enema that operation was postponed. There was no vomiting, the temperature chart gave no help, and the pulse-rate did not increase until late in the disease.

Pain of Muscular Origin.

This is not often seen in hospitals.

Case 3.—A sparely-built, single woman of 38 was seen in the summer of 1908. There was pain in the abdomen, especially in the right iliac fossa, worse on movement, and palpation in this region revealed tenderness of the abdominal wall. She had played tennis in an untrained condition the whole afternoon of the day before, and the tenderness of the abdomen seemed to be muscular. Other muscles were also tender. I have also seen muscular pain in the right iliac fossa in golfers who had played when out of training.

Influenzal Appendicitis.

This must be included, though my views on this subject have undergone some modification since I first made notes of it.

Case 4.—A works chemist, aged about 21, was taken suddenly ill while at work with headache and violent abdominal pain. The attack was so sudden and severe that he screamed out, fell down, and "writhed in agony." He was sent home on an ambulance, and was sick on reaching home. Previous to this attack he had been feeling run down, and his throat had been a little sore for a few days.

When I saw him his great restlessness made examination difficult. The temperature was 101·6° F., the pulse-rate 140 per minute, he kept putting one hand to his forehead and the other to the abdomen. He complained of intense abdominal pain in front and round to the back, especially in the right iliac fossa. It was important to decide whether or not some acute abdominal accident had taken place in the appendix region. Judging by his restlessness, his headache, and the fact that several men in the same works had been attacked with influenza in various forms, I decided that he had influenza. Next day the temperature remained about 102° F., and the pulse-rate 140, but the pain was not complained of so much in the abdomen as in the back; the abdominal tenderness was hardly noticeable and the headache remained. After this, recovery was rapid; in a week the patient was up, and in fourteen days was about again.

Case 5.—A man of 43 was taken suddenly ill at 10 a.m. on October 9, 1909, with abdominal pain and vomiting. Later in the day the pulse-rate was about 130 per minute, the temperature 102° F.; the abdomen was tumid and tender in the epigastric and appendix regions. He complained also of severe headache. On October 10 the temperature was normal, the pulse-rate 66. On October 11, the pulse-rate was 60, the temperature normal and the pain all gone, though there was still slight tenderness in the epigastrium and appendix region. I attended this man subsequently for several attacks of influenza in various forms, and was convinced that the attack now described was the abdominal form of influenza.

Case 6.—A married man of 21 was seen on January 5, 1912. There had been some pain in the left side of the chest for a few days, attributed to a sprain; then on January 5, at 4 a.m., he had an attack of violent abdominal pain, chiefly in the right iliac fossa, with sickness. At 9.30 he looked depressed and ill, the temperature was 98·6° F., the pulse-rate 80; the abdomen was very tender in the right iliac fossa but nowhere else. In forty-eight hours he was much better. His wife had a typical attack of influenza on January 8, and I was treating the household next door for influenza about this time.

Case 7.—A man of 22 vomited on the evening of November 23, 1910, and complained of headache and abdominal pain. On November 24 the temperature was 101° F., the pulse-rate 140, and there was slight tenderness in the right iliac fossa. On November 25 there was still pain in the right iliac fossa and a headache; the temperature was 101·3° F., and the pulse-rate 144. After this date there was no more pain in the abdomen, and the temperature rapidly subsided. I ceased attending on December 7, but other members of the family were subsequently attacked with influenza.

The diagnosis in these cases may be doubted, and the old question asked: Are these influenzas due to the influenza bacillus? While of course one cannot be sure what bacillus causes the disease, it is certain that such cases can give rise to, or themselves arise from "clinical" influenza in others. Points to be relied on for help in the diagnosis of influenzal appendicitis are the severe headache which generally accompanies the attack, sometimes pains in the limbs, and the fact that the pain begins

in the back as well as the abdomen, and often all goes to the back soon after the onset. I used to enter such cases in my notes as pseudo-appendicitis, because the attack commenced like a typical appendicitis but afterwards completely altered in character and became a typical influenza. Later the explanation seemed to be that these were really a form of appendicitis due to influenza. Influenza may concentrate its attack on any part of the alimentary tract, though most commonly on the fauces and pharynx; gastric influenza, influenzal colitis and abdominal influenza are well recognized. In such cases as these the part of the alimentary tract attacked is the lower end of the ileum and appendix. Immunity is rapidly developed, and the local condition subsides.

Case 8 is an exception to the rule of rapid subsidence of the local symptoms.

A woman of 23 was attended in November 1910 for pain in the abdomen and back and vomiting. The pain in the abdomen was chiefly in the right iliac fossa. I was attending the mother and a brother of the patient about this time for influenza. The pain in this girl's case lasted one week. About two weeks after the pain had ceased I could feel a small, rounded, movable, painless swelling in the right iliac fossa and on December 1 I removed a long and thickened appendix. At its base there were a few filmy adhesions; the mucous membrane inside was normal-looking, but showed patches of discoloration that I took to be old petechial hæmorrhages.

I have seen other cases where an ordinary attack of appendicitis was preceded by a sore throat. This suggests that an attack of influenza may cause a transient inflammation leaving some permanent change in the appendix, and rendering it more liable to attacks of ordinary appendicitis. If influenza or sore throat can cause appendix trouble, is it not possible that other specific fevers also, such as measles or scarlet fever, may act in the same way, and perhaps leave behind a "lame" appendix just as they may leave a "damaged" lung?

It seems highly probable that the increase in appendi-

citis within the last thirty years is connected with the recrudescence of influenza since 1889. This may be hard to prove, but it is, at any rate, more likely than any other suggested cause of the increase, such as a more strenuous life, the use of hard toothbrushes, or the greater consumption of bananas !

Pain due to Pelvic Troubles.

Pain in the right iliac fossa due to inflamed appendages in the female, or to menstruation, or to pyelo-nephritis in pregnancy or at other times, is well recognized. In pyelo-nephritis especially there is well-marked tenderness at MacBurney's point, probably where the ureter crosses the pelvic brim. In chronic infections of the urinary tract in women, due to *Bacillus coli* or other organisms, this tenderness in the right iliac fossa may be marked, and may lead to a wrong diagnosis because the other symptoms are not so obvious as in acute cases.

Case 9 shows another possibility of error. A parlourmaid, aged 25, was seen on October 29, 1912, when sent to hospital for appendicectomy. Six weeks before admission she had diarrhœa, sickness, and right-sided abdominal pain. The vomiting lasted three hours. There had been two previous similar attacks within the two preceding months, and her doctor mentioned some "gastric disturbance" during the whole period of illness.

The girl seemed healthy and nothing was felt in the abdomen. On October 30 I removed the appendix. Now, as Dr. Robert Hutchison said epigrammatically at the Liverpool meeting of the British Medical Association, "Gentlemen, no surgeon ever sees a normal appendix, there is no such thing in surgery as a normal appendix." This was an exception, however, for it certainly was normal. On further examination I found the uterus enlarged to the size of a three months' pregnancy, and this was evidently the cause of the "gastric disturbance" and the right-sided abdominal pain."

Case 10, a housemaid, aged 20, was attacked suddenly at a menstrual period with pain in the right iliac fossa. She was sick on and off for four days and a sharp burning pain persisted in

the original position for seven days. After another seven days' interval, there was another attack of pain, during which she was seen. There had been a similar attack of pain a year before, lasting fourteen days. Her temperature was about 101° F., the pulse-rate over 100 per minute; there was superficial and deep tenderness in the right iliac fossa, and per rectum a tender firm swelling was felt to the right side of the pelvis anteriorly. The symptoms subsided with rest in bed, but recurred when she got up.

Operation, a month after the beginning of the pain, revealed a large parovarian cyst in the right side of the pelvis and an appendix kinked sharply close to its distal end.

In this case it is difficult to say whether the cyst or the appendix caused the symptoms, probably it was both.

A rather profuse ovarian hæmorrhage accompanying a normal ovulation may simulate appendicitis.

Pain associated with Abnormalities of the Colon.

It is well known that a distended cæcum, due to constipation, may cause pain in the right iliac fossa. The following case, due perhaps to an allied cause, surprised us at operation.

Case 11, a married woman, aged 29, had suffered for years from "dyspepsia" and occasional abdominal pain with tenderness over the appendix. At operation on November 20, 1912, the appendix was removed and appeared normal. A striking feature was the length of the colon. The transverse colon was V-shaped and hung into the pelvis so as to touch the bladder. The sigmoid colon was truly "omega" shaped, the loop reaching above the umbilicus behind the transverse colon.

The discovery of appendix dyspepsia seems to have overshadowed for the moment the recognition of constipation dyspepsia, and perhaps also of gall-bladder dyspepsia. It is probable that a disease of the alimentary canal at any point may cause some reflex gastric disturbance, either in secretion or motility. Apart from appendix or constipation dyspepsia, I have seen dyspepsia apparently resulting from a carcinoma of the colon which had not yet caused intestinal obstruction, and in this case

the extremely long colon was the probable cause. Presumably Sir Arbuthnot Lane would have short-circuited or removed this colon. A simple short-circuiting seemed unlikely to be of benefit, and removal seemed out of the question for such symptoms.

Pain due to the Gall-bladder.

Case 12 I saw for the first time when assisting at the operation. A woman, aged 42, had suffered from attacks of abdominal pain and vomiting for over six months. For the last six weeks she had vomited almost daily. When admitted, jaundice was present but slight, and was said to be "wearing off." There was tenderness over the appendix and over the gall-bladder. At operation, the gall-bladder was thickened and opaque, but no stones were found in it or in the ducts, and the liver was healthy-looking. The appendix also appeared normal but was removed. The patient died suddenly twenty-four hours after the operation, and there was no autopsy.

Pulmonary embolism was probably the cause of death, which certainly was not due to hæmorrhage. I am informed that the urine was normal, but the record is admittedly imperfect.

It is difficult to say what caused the symptoms, but the attacks were probably the sort of cholecystitis which may result in gall-stones later.

This case and No. 11 suggest the advisability of a careful X-ray examination before operating on a case of abdominal disease where the diagnosis is not obvious.

I have seen another case with thickened gall-bladder, atresed duct but no sign of stones.

Pain due to Endothelioma of the Peritoneum.

Case 13, a little girl, aged 9, was taken ill one Saturday in February, 1913, with sickness and abdominal pain; previously she had been well and attending school regularly. A doctor saw her on the following Monday. He found an abdominal swelling and sent the case into hospital on Wednesday as a probable appendix abscess. On admission the child was well nourished, but looked ill and was vomiting, the temperature

was 100·2° F., and the pulse-rate 110. A firm, tender, and fixed swelling, the size of an orange, was felt in the abdomen to the right and at the level of the umbilicus. At operation on the day of admission a large mass was found which could not be removed and which seemed to involve the stomach, intestine and omentum. At the autopsy, on Thursday afternoon, we found the mass to consist of a growth which involved stomach, omentum, colon and intestines. There were blood cysts in the mass, and also pinkish grey lumps of the size and consistency of a ripe damson plum. In the stomach wall were a number of projecting nodules, mainly towards the pyloric end. The Clinical Research Society pronounced the growth to be an endothelioma.

It seems curious that there was no emaciation, and that the child remained well until the last week of life. The symptoms were probably due to intestinal obstruction; hæmorrhage into the growth may have determined the onset.

Rare Swelling in the Right Iliac Fossa.

Case 14, a labourer of 68, came to a practitioner's surgery complaining that he had been ill with a cold for three weeks and had also had discomfort and a swelling in the right iliac fossa. He was passing water more frequently of late and had "a poor stream." A rounded painless swelling was discovered in the right iliac fossa; appendicitis was diagnosed and the patient was sent to hospital for operation. The swelling was elastic and lay behind the posterior peritoneal layer. When sinus forceps were thrust into it urine flowed from the aperture. A median laparotomy was then performed and a large mass felt at the bladder base. Rectal examination confirmed the observation. The swelling was a hugely dilated ureter secondary to obstruction by a carcinoma of the bladder.

A preliminary rectal examination would have been most helpful.

These cases contradict those who dwell on the dullness and lack of scientific interest of private practice. The general practitioner's attention is not confined to any one department, and at any hour of the day or night some-

thing of interest may surprise him. The usual advice to the student to devote his attention in hospital to the common things which he will have to see and treat later is wrong; provided he has ordinary ability he cannot help learning the common things. It is the rare conditions which will give interest to life and help him in times of difficulty.

CHAPTER XXXI

CARCINOMA RECTI

On the morning of November 26, 1908, I saw an elderly man of haggard appearance who complained of frequent micturition and constant trouble with the bowels, which some days were too loose, at other times confined. He had the sensation of a lump close to the anus, and imperfect control over the sphincter; there was also a constant discharge of mucus from the anus.

He told me that his health had been broken for the last ten years; he had seen many doctors and been to different hospitals without relief. He was getting thinner but could not give details about his weight. The trouble with micturition was of many years' duration, but had become worse the last few years; he dated the onset of the bowel trouble some three years back. There had been much pain, and for some weeks he had not known what it was to have a night's rest. Some two or three years previously he had visited a London hospital, where immediate operation had been advised. The idea frightened him, and before his name had been registered for admission he left.

He was of spare build, intelligent but neurasthenic and armed with a profusion of medical terms, as might be expected after such an extended experience of our profession. Examination of the thorax and abdomen was negative. There was a vertical linear surgical scar about three inches long above the pubic symphysis. This had been made by an operation at the local hospital in the hope of relieving his neurasthenic symptoms; the skin only had been incised and the result was not encouraging.

Examination of the rectum, which was painful, revealed a deeply ulcerated surface inside the anus, commencing about three-quarters of an inch above the anal orifice. The edges of the ulcer were much raised and hard, the floor was fixed to surrounding structures, including the base of the bladder, and there was slight bleeding on examination. The ulcer extended forwards from just behind the mid-left point of the rectal wall to a point a little to the right of the mid-line anteriorly. With difficulty the finger could just be passed beyond the upper margin.

There seemed little doubt of the diagnosis of a rectal carcinoma, though one or two minor points in the history, such as the duration, were against it. Bromides were given to procure sleep, urinary antiseptics for the bladder trouble, and cocaine suppositories. I gave the relatives a guarded though not a hopeless prognosis.

The patient slept, there was less trouble with micturition, and a very distinct improvement in the mental condition resulted. It seemed well worth trying the effect of iodides, so on December 16 he was given a mixture of iodides and mercury with liquid extract of cascara, tincture of opium and sarsaparilla. At this time he was in bed, nursed night and day by attentive relatives. The village despaired of his recovery, and one old dame, who had a reputation for second sight, stopped me in the street to tell me she had seen him dead, and she knew that he was going to die soon. But the patient belied the prophets. He was up and out in January, and from my notebook I see that early in February he went to a funeral; a few days later he walked over seven miles and the following week he attended three revival meetings in one day. Early in March the rectal ulceration was entirely healed, and there remained only a complaint of slight incontinence when the bowels were loose. The patient was constantly under my care during 1909, but the rectum was cured and remains cured. He suffers from introspection and complains first of one internal organ and then another, so that it is impossible to predict his next complaint.

The case was really one of true syphilitic proctitis, yielding readily to iodides and mercury. I cannot remember seeing a similar one during several years at the "London," though there were frequent cases of stricture and ulceration of the rectum, called syphilitic but on which mercury and iodides had no effect, and which were more probably due to chronic septic ulceration. The close simulation of carcinoma is interesting. Syphilis seemed unlikely in an elderly man of respectable position, and the local examination strongly suggested carcinoma. This form of neurasthenia seems to be not uncommon in elderly syphilitics. It is nothing like dementia paralytica, but is none the less a cerebral neurasthenia which may well be due to some changes in the cortex cerebri.

CHAPTER XXXII

Written for the International Tuberculosis Congress number of the Journal of the N.T.A. of America.

TUBERCULOSIS WORK IN BRITAIN[1]

OTHER nations sometimes consider Great Britain as one country, but statistical tables or special instructions issued by the Ministry of Health refer only to England; separate tables and other notices must be sought for Scotland, the North of Ireland and in some instances for Wales as well. Although this practice may have its use in encouraging the spirit of nationalism, it may also provide a headache for the historian.

One hundred years ago public health in this country was in a truly parlous plight. Most houses had cess-pools in their cellars, and degrading poverty existed side by side with affluence and comfort among the wealthier classes. Child labour was the rule, and the cotton operatives of Lancashire protested against the farming out of London Poor Law children in cotton mills at a penny a day because it prevented them from augmenting their pittance of a shilling a day by working their own children in the mills. Tuberculosis was rife. Thanks to the noble and persevering efforts of reformers such as Edwin Chadwick and Robert Owen, and to Charles Dickens's vivid pictures of life as it then was, the Public Health Service in Britain to-day is second to none.

[1] Grateful thanks are due to Sir Robert Philip, Professor Lyle Cummins, Dr. J. A. Sequeira, Dr. A. S. MacNalty, Sir Henry Gauvain, Dr. Gordon Pugh and Dr. Denet Kravitz and others for their kind assistance.

PIONEER EFFORTS IN TUBERCULOSIS PREVENTION.

Bodington in 1840 was the first to advocate open-air treatment for tuberculosis. The first tuberculosis dispensary was started at Edinburgh by Robert Philip in 1887, providing an example that the world has followed. In the 90's were opened the first sanatoriums, and each year their number has increased, while many special hospitals for observation purposes or for advanced cases have become available. In 1903 was laid the foundation stone of the King Edward VII Sanatorium at Midhurst for patients of moderate means. This was built from a prize design with funds publicly subscribed as a coronation gift. A sister institution, the Queen Alexandra Sanatorium, was opened at Davos in 1909. The Cripples' Home at Alton, founded by the munificence of Sir William Purdie Treloar when Lord Mayor in 1909, has led the way, under the able direction of Sir Henry Gauvain, in the treatment of surgical tuberculosis. In 1908, the Metropolitan Asylums Board built at Carshalton a magnificently equipped institution of 900 beds for children with non-pulmonary disease. The Liverpool Hospital at Leasowe, which treats surgical tuberculosis by the methods of Sir Robert Jones, was opened in 1914.

There are available to-day for the public treatment of tuberculosis some 21,000 beds in England, 4,300 in Scotland, 1,500 in Wales, and 520 in the North of Ireland. There are 750 whole or part-time officers of the tuberculosis service.

THE BRITISH NATIONAL ASSOCIATION. NATIONAL HEALTH INSURANCE.

In 1899 the National Association for the Prevention of Tuberculosis was inaugurated as a result of a meeting at Marlborough House in December, 1898. This body is composed of lay and medical members and has done useful propaganda work from its birth, although since the commencement of an official tuberculosis service its

field has been of necessity somewhat restricted. Tuberculosis became notifiable in Scotland in 1897, and a few years later certain localties in England—Sheffield for instance—followed suit. In 1911 all pulmonary cases became notifiable, and in 1912 non-pulmonary forms as well.

The National Health Insurance Act of 1911 was a great aid to the tuberculosis campaign. This Act was indeed the most beneficent piece of domestic legislation for a century; far more so than the highly-praised Reform Bill, or even the Repeal of the Corn Laws. Research in tuberculosis, as well as in other subjects, is cared for by the Medical Research Council, that useful offshoot of National Health Insurance. Various committees and commissions have also helped considerably, notably the Astor Committee of 1912. About this time the State began to pay half the cost of the public treatment of tuberculosis, and a larger proportion towards the initial cost of institutions and dispensaries.

Post-War Progress.

In 1919, when the Ministry of Health replaced the Local Government Board, the foundation of our present system was well and truly laid. Since the War the campaign has progressed with rapid strides, and although training colonies have failed to produce patients who can compete successfully with their fellows in the open labour market (out of 65 men trained by London County Council Institutions only one obtained outside employment) they have demonstrated that the long treatment thus secured will save many useful lives. Papworth, under Dr. Varrier-Jones, was and is the pioneer training colony.

The year 1924 saw the formation of the Joint Tuberculosis Council, on which are represented every branch of tuberculosis worker as well as the general practitioner through the British Medical Association. Observers for the Ministry of Health and the Ministry of Pensions have

seats on the Council. This body has organized collective research with the financial help of the Medical Research Council, and has arranged systematic post-graduate instruction in tuberculosis.

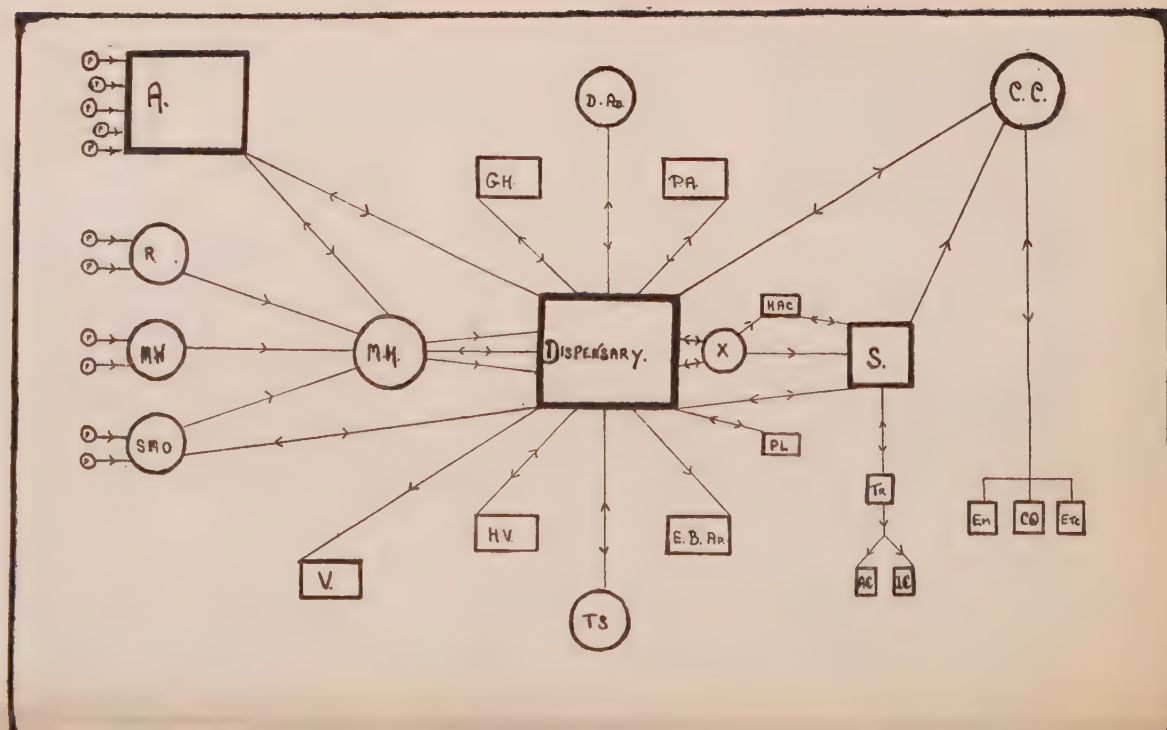
Among the important enactments of 1925 were the following: (1) An infective tuberculous person may be compulsorily isolated by a magistrate's order. (2) An infective tuberculous person must not handle milk, or foodstuffs which he might infect. (3) A cow with a tuberculous udder, or a "bovine animal" with a cough or tuberculous emaciation, can be slaughtered and suitable compensation paid.

International Scholarships.

The international scholarships arranged by the League of Nations provide stimulus to public health work in every country, and the tuberculosis services participated in them in 1924. We must gratefully acknowledge that the funds which make these possible come from the Rockefeller Foundation. America has not yet joined the League of Nations, but provides the funds necessary for one of its most beneficent works. This fact is not sufficiently realized.

A Typical British "Tuberculosis Scheme."

All local authorities are compelled to formulate schemes, in other words, to draw up plans for combating tuberculosis in their areas. A diagram will represent better than a long verbal description the method in general use. Cases are notified to the Medical Officer of Health, who refers them to the Tuberculosis Officer, or they are referred directly to the Tuberculosis Officer by the general practitioner or school medical officer (in Lancashire 76 per cent. of cases are first discovered in this way), or they are noted during the routine examination of contacts. The best treatment is decided upon and carried out in consultation with the patient's own medical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DIAGRAMMATIC REPRESENTATION OF A TYPICAL BRITISH TUBERCULOSIS SCHEME (after Dr. Denet Kravitz[1]).

A., General practitioners; P., patients; R., transfers from other areas; M.W., maternity and child welfare; S.M.O., School Medical Officer: M.H., Medical Officer of Health; V., preventorium; G.H., general hospital; D., dental treatment; Ad., adenoid treatment; P.A., pensions authorities; H.V., health visiting; T.S., surgical tuberculosis institutions; E., extra nourishment; B., beds, shelters; Ap., apparatus; X., observation hospital; H.A.C., hospital for advanced cases; P.L., Poor Law organization; S., sanatorium; Tr., training centre; A.C., agricultural colony; I.C., industrial colony; C.C., Care Committee; Em., employers; C.O., charitable organizations.

[1] Belgian International Tuberculosis Scholar in 1924.

adviser. Institutional treatment may be provided, or extra nourishment, special apparatus, shelters and bedding supplied: dental treatment may also be administered while the patient remains at home. Care committees exist in some 50 per cent. of districts and considerable elasticity is permitted.

Preventorium treatment has been commenced during the last few years. Delicate children, not definitely tuberculous but usually "contacts" of tuberculous persons, are removed for a time from the danger of infection and placed in good surroundings; generally an institution, but sometimes, as at St. Leonards, in selected country households.

Originally the result of private effort, anti-tuberculosis work is now almost entirely in the hands of Local Authorities and the Minister of Health; private charity provides only a small proportion of the necessary money (in Wales, £6,000 from invested donations out of a total annual expenditure of £185,000). Liaison with the general public is obtained through the local councils and through care committees. On these are representatives of all bodies interested in the welfare of the people. Some workers sigh for the old days of voluntary control, and indeed a voluntary organization is frequently more elastic and resourceful and gets better value for the money expended than does a Government department. But its work tends to be patchy, varies widely in different localities, and depends chiefly on the enthusiasm of individuals, which is occasionally misdirected. On the other hand, the aim of a Government department is to bring the whole community up to the same standard, and this results in the crystallization and perpetuation of what seems best at the time. It has been said that central control prevents active wrong doing, but hinders rightful activities, and is sometimes a bar to progress. The criticism is also made that Local Authorities are more concerned with formulating schemes than with fighting tuberculosis. The solution lies in a broad-minded central administration, combined with local voluntary effort,

"The Witches' Cauldron." General light treatment as first installed at the London Hospital.

which may be exerted through Care Committees, or, as at the Torquay Tuberculosis Hospital, through an "Occupation and Amusements Committee," composed of those interested in hospital welfare. And there are other methods. Pope may help us here:—

> "For forms of government let fools contest,
> Whate'er is best administered is best."

In the face of incessant difficulties, the chief of which has been financial, our Ministry of Health has steadily gone forward; one progressive step has succeeded another. Each innovation is greeted with a wealth of destructive criticism, but after a time most workers are ready to admit that another advance has been made.

The Ministry encounters great difficulty through the frequent failure of tuberculosis authorities to agree as to what should be done, and is therefore tempted to decide beforehand and then simply to show the plan before publication to various bodies interested. Their observations are listened to attentively, but there is no real consultation. The Joint Tuberculosis Council, however, now provides a genuine representative body, which the Ministry has not been slow to utilize.

Guarding against the Dangers of an Official Tuberculosis Service.

Certain other dangers of an official tuberculosis service are worth discussion:—

(1) Various rules of working are laid down, statistical returns are demanded and the tuberculosis worker tends to lose his initial enthusiasm and become a machine—the servant of his local authority. The way out is simple but not sufficiently recognized, so perhaps there is no harm in stating it. The tuberculosis worker must regard himself, not as the servant of a local authority but as the servant of God, whose duty it is to *fight tuberculosis* in co-operation with his local authority.

(2) There is a danger of harrying the patients and their

families too much. The practitioner reports a case, the Medical Officer of Health visits, the Tuberculosis Officer visits, and perhaps the Health Visitor and a member of the Care Committee follow. The result may be that patients dread to be reported, they come to regard as enemies the visitors who seek only to befriend them, and may refuse to accept advice. Concealment of cases results. I have travelled over 100,000 miles in South Devon hunting tuberculosis, and my car is so well known that if it remains outside a house the whole village suspects "consumption," although my function may be merely to give an opinion on a doubtful case. The advanced and dangerous case is difficult to conceal, and a tactful co-ordination of our efforts is sufficient to avoid this difficulty.

(3) The greater power of prevention is in the hands of the general practitioner; without him we "beat the air." Therefore, whatever happens, his sense of responsibility must not be impaired.

It may happen, as in my own case, that a tuberculosis officer has on his visiting list over 5,000 cases and contacts. Inevitably he sees some cases too late for real prevention, and the local practitioner could far better have taken the necessary steps. For this reason the Tuberculosis Officer must cultivate and gain the respect of practitioners. He must join the British Medical Association and the local medical societies, and take as prominent a part therein as his popularity and capacities allow. In individual cases it may be impossible to do what appears right without falling into the greater error of alienating the practitioner. The risk must then be taken and the case left entirely to his care. It is important, too, that the Tuberculosis Officer should himself at one time have been a general practitioner; only thus can he possess certain knowledge of the difficulties and dangers of practice. The majority of general practitioners are as anxious for prevention as is the Tuberculosis Officer, and the general public is becoming increasingly alive to the risks of infection.

(4) Some districts, such as Lancashire (where consultant tuberculosis officers receive a total of £1,150 per annum) recognize the importance of a well-paid tuberculosis service, but in too many others the service is starved and underpaid men are appointed, thus fulfilling the letter but not the spirit of the law. The best rule with limited funds is to appoint few officers and pay them well.

Britain's Falling Death Rate.

For the results of our tuberculosis campaign, Sir Robert Philip's figures may be quoted. From 1871-1921 there was a steady fall in the tuberculosis death rate but the percentage reduction of mortality was more pronounced in the later years. In Scotland the rate fell 17 per cent. between 1871 and 1881, and 18 per cent. between 1881 and 1891. In this decade the Edinburgh Tuberculosis Dispensary was opened and public attention was being directed to the disease. From 1891-1901 the fall was 19 per cent., from 1901-1911 26 per cent., and from 1911-1921, 31 per cent. In England the figures differ slightly but are in some ways more striking. The diminution for the 1871-1881 decade was 12 per cent., for the next three decades 17 per cent., but for the next decade (1911-1921), the one in which our "schemes" were first devised, the diminution was 23 per cent., in spite of the rise in mortality due to the War. Sir Robert Philip has said that tuberculosis is being defeated and we have only to continue to man the trenches in order to rout the enemy completely. I say that the enemy is not defeated, only wavering; we must now leave the trenches, where we have already stayed too long, and redouble our attack. It must be remembered that tuberculosis kills to-day one person in ten in the British Isles, and that of those dying in the prime of life one-half succumb to tuberculosis. One great effort and, in less than two generations, tuberculosis will be a rare disease. This our grandchildren will live to see.

CHAPTER XXXIII

DREAMS AND THEIR INTERPRETATION

THIRTEEN years ago, while in general practice in the North of England, I was asked to give a public lecture and selected this title, believing that the new work on dreams had a permanent value, and that the best way to obtain knowledge of it was to read up the subject and speak about it. If I could make it understandable to others I might come to understand it myself. The subject was popular, the audience a good one. Some introductory remarks by the chairman allowed late-comers to settle to their seats, and those with a cough to perform their preliminary paroxysms without disturbing the lecturer. He begins:—

"We are all interested in dreams, and have been since the world began. They stir our emotions, upset our resolutions, and provide us all from time to time with uncanny superstitious sensations. They serve as themes for the novelist, as inspiration to the poet, and as illustrations to the politician and teacher. We have a feeling that there is something mysterious about a dream, some hidden meaning or reading of the future that we cannot quite grasp; yet, since the days of Aristotle, how slowly has our knowledge advanced! The opinion long held by the learned and scientific has been summarized by Binz: 'Dreams—a physical process, always useless, frequently morbid.' But in this matter the truth rests with the soothsayers, the superstitious and the public generally, rather than with the learned. Dreams have a meaning.

"Freud's work and writings have focused attention on dreams, but much that he says is either speculation or

philosophy, reminding one of Schopenhauer, Kant and other moral philosophers. It is an over-estimate to say, as has been done, that Freud's influence on psychology is as great as that of Darwin on natural history. Moreover, Freud is able to find in nearly every dream curiously undesirable features, mainly sexual, which many of us cannot accept as realities. In every house there are rooms of undoubted utility where yet we would not care to spend an evening."

The attention of the audience now secured we get to business.

Causation.

(*a*) *External stimuli* may obviously cause dreams. Experiments in this direction, not always successful, have been made; tickling the face with a feather caused the sleeper to dream of a mask of pitch being torn from his face; sharpening scissors caused a dream with the sound of bells; smelling eau de Cologne a dream of a heavily-scented shop; pinching the neck gave rise to the dream of a blister applied by a doctor of childhood's days; a drop of water on the forehead caused dreams of perspiration and thirst, while a burning candle near the face gave dreams of heat, bad weather and storms.

(*b*) *Internal stimuli*, such as subjective flashes of light and noises in the ears, may give rise to dreams. The writer once suffered from loud noises in the ears after concussion and dreamt of noisy, turbulent scenes; a crowded restaurant, for instance, with everyone talking. They spoke louder and louder until the noise became a roar and the dreamer awoke.

(*c*) Sensations such as *thirst and hunger*, especially thirst, may cause dreams, usually of the want fulfilled.

(*d*) *Psychical stimuli*, such as emotions, desires, anxieties and the like, are said to cause the great majority of dreams, but it is difficult to differentiate between these and others which are due to stimuli from internal organs—stomach or liver, for instance.

(*e*) Allusion should also be made to the dreams which so commonly occur *on waking*. An alarm clock may give rise to a great variety of situations. For instance, the dreamer wanders through green fields on a pleasant spring morning, people are going to church, he passes into the churchyard and moves among the tombstones, reading names. Soon he notices the bell in the church tower begin to swing, it finally rings and he awakes—the alarm clock. Another observer, struck on the neck by a falling wooden rod from the bed head, dreamt of taking part in stirring scenes of the French Revolution. Finally he is tried. Robespierre, Marat and others are all there. After varied incidents he is condemned to death and, accompanied by an enormous multitude, goes to the scaffold, is guillotined—and awakes.

Such dreams may appear long and complex and yet take place between a transient stimulus and the awakening.

Any sensory impression or recollection, however brief, perhaps even unnoticed, may reappear in a dream and with care can be traced. Delbœuf dreamt of a snowy courtyard where he found two half-frozen lizards He picked them up, warmed them, placed them in the crevice of a wall and fed them with the leaves of a fern growing there,whose name in the dream he knew—*Asplenium ruta muralis*. Two other lizards then appeared and fell on what remained of the ferns. On looking towards the fields the dreamer saw lizards five and six running to the crevice, and finally a whole procession of lizards proceeding in the same direction. Delbœuf had little knowledge of Latin, and it was discovered later that, two years before this dream, he had written from dictation Latin names in an album of dried plants, the names including *Asplenium ruta muralis*, and five years before the dream he had looked at an old book in which was figured a procession of lizards. Similar curiosities are of nightly occurrence.

The Censor.

In the mind there take place a small number of *conscious* processes and reasonings, and a very much greater number of *unconscious* processes. Ideas and recollections are closely related to one another and occur, so to speak, in chains, one or more links of which may present themselves in a puzzling way to consciousness and require a good deal of analysis to trace their origin. At this point we must introduce the Censor. We all have our own conception of our characters, differing to a greater or lesser extent from reality. Most of us, for example, have exaggerated ideas of the position we occupy in the world, and over-estimate the amount of thought space given to us by others (a useful compensation perhaps for the drab lives which many are compelled to lead). There exists within us a mechanism whereby events, sensations and mental experiences are subconsciously moulded to fit this conception. We may wish, often without realizing it, to impress on one individual or a group, some special picture of our characters which may be quite false; the same mechanism comes into play, and our words and actions are subconsciously moulded for us. In dreams, likewise, this mechanism exists and has been called "The Dream Censor." It is probably related to the complex reflex mechanisms which make us dress ourselves and take the morning bath always in the same way, yet without any active thought. Similes or interpolations may also be employed subconsciously.

In dreams we find a *manifest* content, the things that are seen, heard or felt, and a *latent* content, a wish, apprehension, reflection or reminiscence which is steering the dream ship. The manifest content nearly always contains something which occurred on the preceding day. When in general practice I dreamt one night that I was in a muddy area on the bank of a stream. The area was planted with small trees bare of foliage. With a stick I dug in the mud and unearthed bright gold and silver coins, pocketing them gleefully. This dream

seemed curious and objectless, but on adequate reflection the key appeared. Thinking of the coins alone elicited no clue, but when I envisage their *brightness* I remembered a farm dairy I had visited the day before where polished brass and white metal glinted in the winter sun. The muddy area with young trees was a little distance from the farmhouse. Most of my work at that time was done on a "push-bike"; the roads were muddy, and on two or three occasions recently the wheels had become clogged and ceased to revolve until I had cleared the mudguards with a short stick. Then appeared the latent content, for with the farmer I had discussed farming and lauded the methods of Denmark and Finland. "All very well," said he, "they have a subsidy there." Short of cash as usual, there passed through my mind: "Farmers a subsidy, indeed, and why not doctors?"

Another illustration: A physician is much concerned about the health of a relative and has advised a voyage. Before taking up medicine he had been employed in a large warehouse where shirts were packed for export. At the time the dream occurred he was seeing a large number of out-patients, too many for adequate treatment in the time allotted, and had protested about this. He dreams of a lad about to travel, who needs shirts. They were in a large warehouse with stacks of shirts; bale after bale was unpacked, but none would fit. Protesting about the number of useless shirts the dreamer left in haste. Here the latent content is found in the realized wish that a lad—representing the relative—is to travel, and the manifest content the shirts of which he had previously seen so much. The number and ill-fit of the shirts represented the overcrowded out-patients about which he had complained.

Fusion of different faces, or faces and bodies, and various combinations of events are usual in dreams. A dream character may have the head and hair of one person and the beard or personality of another, and even more complex fusions may occur. These can generally be traced when awake by steadily visualizing the dream face.

Numbers in Dreams.

Numbers may appear in the form of arithmetical sums, invariably incorrect. I meet a dream policeman with a large number, BB486, on his shoulder. This seems mysterious, but I visualize the figures, white on a dark ground, and then remember that this was the registration number of my first motor car, long deceased. I see in a dream an addition sum:—

181
119
———
5,426

This is perplexing until I notice that the total is very white and clear, and that one of the two numbers above is browner than the other. It then becomes obvious that the upper number is to be seen on the back of my own beach tent, the lower, in a different colour, on the tent behind, while the total is a motor number. An Austrian lady dreams she has to pay for something, and her daughter takes out of her purse 3 kroner 65 kreutzer; the mother says at once, "But it costs only 21 kreutzer." The lady and daughter were staying in Vienna for treatment which would end with the school year in 21 days, but the principal of the daughter's school had pressed for her to remain another year (365 days) which would have meant more treatment and further expense.

Common Dreams.

The dreams which occur to all of us deserve special study. Psycho-analysts fit various meanings to them, yet in all logical probability they have a common origin if it can be discovered.

(*a*) The dream that we fall from a height and end in bed, awake, is more frequent in children, and is, I think, associated with the deep sigh and sometimes little shudder, which we see before awaking. The long expiration gives the sensation of falling.

(*b*) Flying, too, may well originate in deep breathing

movements, though possibly there is more in it than this.

(*c*) For the nightmare that one is pursued and yet glued, or partially glued, to the spot, I have no ready explanation, but I do not believe that it is due (as has been asserted) to mental indecision or Censor interference. This again is more frequent in early life.

(*d*) The dream of enormous swelling of body, limbs or head, is in my experience most likely to accompany slight pyrexia and malaise.

(*e*) To dream of scanty or unconventional attire is probably not due to a subconscious indecent desire for exposure ; it is rather an apprehension dream from the more natural anxiety to avoid exposure and to be dressed properly and conventionally. We do not like when entertained to be absolutely out of date in our collars, or the only one in evening dress or the only one not in evening dress. As we grow older we care less for conventions and this dream becomes less prominent.

(*f*) Another common dream is that we are failing to accomplish something we have undertaken. An appointment has to be kept, perhaps, yet one incident succeeds another until it is impossible to be in time.

Dreams occurring with certain diseases or under special conditions would probably also repay special study.

(*a*) *Overwork* and upset due to examinations may cause prolonged and vivid dreams in which one is constantly just escaping from dangerous situations.

(*b*) *Concussion*, in the writer's case, gave rise to vomiting, headache and loud ringing in the ears. The dreams were of two types. In one, all sorts of horrible and changing appearances were seen, the object of which seemed to be to frighten the dreamer ; though they were very nearly successful he managed to remain fairly calm. In the other there were stirring and very noisy scenes ; a restaurant, crowds of people moving and talking, plates and dishes clanged and clashed. People were seated for a time, then rose excitedly, moved and shouted, first one or two, then more, until the whole room rang, as did my ears when I awoke.

(*c*) I have already written about encephalitis dreams. There was the single constant image or geometric pattern and the disagreeable stranger towards whom I bore the fiercest animosity and finally struck violently.

Emotions are sometimes stirred in dreams from causes that appear trivial, while, on the other hand, grave happenings may create no emotional disturbance. It must be remembered that serious events concerning others do not disturb us much; we read of a flood or earthquake with a long casualty list, and our appetite for breakfast remains unimpaired.

But another factor in such dreams is that the manifest content may hide a quite unexpected thought. Freud dreamt without emotion of the death of someone with whom he was in close contact, and analysis showed that the individual really represented himself, and that he was thinking of provision for dependants in case of his premature death—an event which, considered in this way, does not stir our emotions. In the same dream he was unduly frightened by the passage of a ship. Later he recollected that its colour was black, suggesting mourning, and that one extremity resembled the shape of Greek vessels used to convey corpses for burial at sea.

Three lions chase a dreamer, but she is not afraid. The mane of one lion resembles her father's beard—it is her father playfully chasing her—while an English teacher, *Miss Lyons*, and an acquaintance, who had sent her the ballads of *Loewe*, provide the other two lions. Hence no fear.

Uses of Dreams.

Dreams may rightly be called babblings of the unconscious mind, and probably occur only when we are either awaking or not deeply asleep. Yet careful observation and correct interpretation of these babblings may still provide factors essential to the proper appreciation of psychology.

(*a*) The unrolling of the dream picture, the linking of manifest contents with various recollections and

impressions and the search for latent contents is a pastime just as intriguing as, and more useful than, the solution of crossword puzzles.

(*b*) Dreams sometimes enable us to recognize, more rarely to correct, tendencies which otherwise we might not have suspected. Our behaviour in dreams is often most unworthy of what we think we are; but there is a moral sense in them, though a much less active one than in waking life, and it may be possible to strengthen this sense.

(*c*) Second thoughts may mean indecision, but there is no doubt that the reflection provided by sleeping on a letter or decision is nearly always helpful, and the result much saner than the original. In dreams we can sometimes trace the process and further it with the aid of consciousness.

(*d*) Was it Bacon who wrote: "Good times should not end with the day, but be stored in Memory's treasure house to be looked over when things are not so bright"? Dreams sometimes do this for us.

(*e*) The detailed analysis of dreams by others has all the advantages of the confessional, and may bring a weak and vacillating character under the dominion of a strong and beneficent personality (there are psycho-analysts like this); but the method should be used with the very greatest caution, for the ideal is rather to strengthen the patient's own mental legs than to provide artificial ones.

A Breslau physician found that the accounts given by reliable observers of a simply arranged series of incidents were 75 per cent. accurate. Questioning sometimes increased the amount of detail given but *greatly diminished the accuracy*. How much more is this likely to occur when the patient is not a commonplace, reliable observer, but an introspective neurotic!

Moreover, the whole method is open to abuse, and instances of this have come to the notice even of my limited experience. There is the excuse for making money; a psycho-analyst persuades a needy pensioner

that his wife should be analysed, and then charges him 200 guineas for the treatment. Stories bearing on the moral side have also been narrated to me, and one feels that a straightforward seduction would make more attractive reading.

(*f*) Psycho-analysis has taught us the limits of repentance, which is necessary and praiseworthy so long as it is limited to the prevention of future wrongdoing, but harmful if it paralyses initiative.

(*g*) If *telepathy* is possible, and those who have spent their lives studying the subject assure us that it is, one would expect it to figure in dreams.

A medical man of my acquaintance is careful, observant, unimaginative. Between his father and himself there is much natural affection. He dreamed that his father, staying in America, was dead, and afterwards heard that at that very time the father was extremely ill with double pneumonia. The father dreamt in France that his son was in great pain, so he wrote to inquire; that night the son was lying awake with all the discomforts usual after appendicectomy.

Between the sexes I am told telepathy is very likely to occur. We find this the subject of fiction in the "Brushwood Boy" and "Peter Ibbetson," but on such a theme many carefully-controlled observations are requisite.

The Influence of Sex in Dreams.

Freud brings almost everything under this heading, though he often travels by very devious routes to do so. Now the power of sexual impulses cannot be gainsaid, but it is very intermittent, and other factors, such as the desire for food, wealth or power, are also important. There is also what might be called the "social instinct," which makes us perform more or less unselfish actions and feel happier thereby; then there are the religious and church-going instincts—by no means identical, as church-going often provides a substitute for good deeds.

Possibly my judgment is warped by English Christian prejudice as opposed to Freud's broader, less hypocritical, mid-European, Jewish upbringing—but I hope not.

It is absurd to lay down an axiom that all dreams contain a wish-fulfilment, for apprehensions and anxieties are just as prominent as desires in our daily life, and must occur in dreams. Because I dream of the death of my mother, as I often did when a child, must I necessarily suffer from an inverted Œdipus complex and a subconscious homosexual perversion? Every child is anxious not to lose its mother, and is often upset if it fears she may be going out only for the evening; what more natural than that this anxiety should be displaced in dreams?

And if we dream of the F.R.C.S. final, still to be passed twenty years after we have emerged successfully, must we therefore consider ourselves suppressed flagellants or masochists? (I hope these words are spelt aright. Of their meaning I am also uncertain; those in doubt must refer to the Anatomical Department.) The anxiety explanation is much more commonsense. Dreams do not contain any very terrible disclosures, and can be narrated fearlessly without condemnation by sensible folk.

A difficulty in explaining these points to the psychoanalysts is that they are sure to accuse their adversary of some neuropathic complex which prevents his seeing things from their point of view. I wonder what is Mr. Cook's complex.

Sleep-Walking.

In the course of a fairly recent "cause célèbre" some startling activities were said to have occurred while a man was sleep-walking. A leading neurologist went into the matter and decided that there was no literature on the subject genuinely worth reading. (It is refreshing to discover a really virgin subject with no literature in at least three languages to explore.) Janet's book refers to major hysterical manifestations, and does not cover the simple

somnambulism of childhood, which comes within the scope of every general practitioner, and yet has escaped accurate and painstaking observation.

I have tried to observe carefully a few instances. It would take too long to give details, but my conclusions to date may be summarized :—

(1) Sleep-walking in children occurs from one to two-and-a-half hours after falling asleep.

(2) About this time there is a restless period akin to the stage of excitement during anæsthesia. A child liable to somnambulism becomes restless, tosses the clothes, sits up perhaps, and then usually continues its slumbers.

(3) There is always some fixed idea which acts as a driving force during the sleep-walking state ; often the desire to see or be in the same room as the mother ; or to handle or see some favourite toy.

(4) Questioning is not easy. The waking point is not always strongly marked, and it may be difficult to decide whether the subject is asleep or awake.

(5) Sleep-walking is most common between 6 to 10, and again about puberty.

(6) A child sleeps soundly, and a mental disturbance which would awaken an adult may rouse the child to somnambulism only.

It will be seen that my investigations have not gone far, and that the subject presents a fascinating and promising field for research. As in most branches of science, we need more observations and fewer hypotheses.

The lecturer resumes his seat. Questions, inadequate replies ; a vote of thanks, a suitable response ; the audience file out, the evening's entertainment is over.

CHAPTER XXXIV

A FAMILIAL FORM OF ACOUSTIC TUMOUR

With the kind consent of Dr. Anthony Feiling, in collaboration with whom this paper was written.

TUMOURS of the acoustic nerve or nerves have been occasionally reported in medical literature for many years, usually under the head of "tumours of the cerebello-pontine angle." It is largely due to the work of Cushing that the acoustic tumours proper have been clearly differentiated from other tumours in this region, and he was the first to point out their characteristic course and symptomatology. He estimates acoustic tumours as 6 per cent. of all intracranial growths, and over 20 per cent. of those of the posterior fossa of the skull. Histologically, the isolated tumours of the acoustic nerve arise from the endoneurium; their structure, according to Cushing, consists of two kinds of tissue—a dense fibrous tissue and a looser areolar tissue, possessing some of the characters of the glioma. Bilateral tumours, however, are often part of a general tumour formation, which may affect many nerves—in fact a general neurofibromatosis. Such cases have been not infrequently reported. It should be noted, however, that bilateral deafness has been found in cases where only one acoustic nerve was involved. Henneberg and Koch were the first to point out that tumours of the acoustic nerve could form part of generalized neurofibromatosis. Oppenheim remarks that he has seen eight cases where a general neurofibromatosis was masked by the symptoms of intracranial tumour.

A familial or inherited tendency has only been noted in a small proportion of the cases of neurofibromatosis.

Alexis Thomson could only collect ten examples, and the available literature does not record any familial or hereditary tendency in acoustic tumours proper. The history of the family recorded in this article is therefore of unusual interest. None of the cases has been verified by operation or autopsy, but the clinical histories and the condition of those patients who were under careful observation are striking and characteristic, and the existence in one of them of multiple tumour formation renders the diagnosis of acoustic tumours practically certain. The chronological order of symptoms as described by Cushing—namely, auditory and labyrinthine disturbances, headache, cerebellar ataxia, disturbance of the function of other cranial nerves and the increase of intracranial tension, with optic neuritis, and failure of vision—are well exemplified in the history of the family, which is as follows :—

First Generation.

Mary Ann, aged 80, had three brothers and sisters, all healthy. One is still alive ; the others died at a ripe age.

John, aged 80, is deaf and too senile to answer questions intelligibly. He was one of a family of ten, of whom only one sister survives. Several died young, but no details have been obtained except concerning Susan, who died at 30 of an illness lasting a few years and accompanied by headache and deafness, and Sarah, who died, over 60, of " something the matter with her head."

Second Generation.

Mary and John, had ten children, of whom one died in infancy ; four others are alive and well, but one, Richard, has been a patient at the Hospital for Epilepsy and Paralysis, Maida Vale (Case 1). He is now in a Poor Law Infirmary, bedridden, totally blind and deaf. Another, John 2nd, died at the age of 30 after an illness of over two years' duration. He complained first of deafness and noises in the head and was noticed to stagger. Some five months after the onset of his illness he was sent to the Exeter Hospital, where he remained for a month or two. On his return his sight was failing, and

he eventually became quite deaf and blind, although for some time he could walk with support. No history of vomiting or headache was obtained, but his friends and relations had noticed a swelling in his neck about the size of a hen's egg for many years. He died about two years after leaving the hospital.

Elizabeth died at the age of 33 after an illness of two years' duration. The chief symptoms noticed by the relations were unsteadiness of gait, deafness and progressive blindness. She was for a time an inmate of the Exeter Hospital and was considered to be suffering from a cerebral tumour. Operation was suggested but refused.

Susan died aged 29. Her illness began in somewhat the same way, but she died suddenly from a "stroke."

George, died aged 52, after an illness of some years' duration, which was accompanied by deafness, blindness and an unsteady gait.

THIRD GENERATION.

Richard 2nd, son of John 2nd, was a patient at the Hospital for Epilepsy and Paralysis, Maida Vale (Case 2). He had multiple neurofibromata.

William, his brother, stated that at one time he had some lumps about his body, but that they faded away. He looked upon himself as foredoomed to die in the same way as others of his family, but he had no symptoms.

The following is a more detailed account of two members of the family who were under the care of Dr. Feiling at the Hospital for Epilepsy and Paralysis, Maida Vale.

Case 1.—Richard 1st, aged 41, was admitted on July 1, 1919, complaining of deafness, headache, and inability to walk properly. He was then so deaf that it was impossible to obtain from him any accurate history, but I had previously seen him, and was able to supply the following history. He first came under observation with suspected pulmonary tuberculosis in October, 1913, but made a good recovery, and by October, 1917, the disease had evidently become arrested. In October, 1918, he complained of headache and weakness of the legs. From January to February, 1919, he was in a sanatorium, but he was sent home, as his symptoms were entirely nervous in origin. In April, 1919, he was suffering from headache, chiefly occipital, and becoming deaf. His gait

was then slightly unsteady, with a tendency to fall to the right. By May, 1919, he had become very deaf, the headache was worse, and he had begun to vomit occasionally. Vision had become defective. The gait was markedly ataxic. The pupils were unequal, the left being larger than the right, and there was well marked double optic neuritis and nystagmus.

On admission to hospital in July, 1919, the condition was as follows: He suffered from a severe and continuous headache, chiefly localized to the occipital region on the left side. There was complete bilateral deafness. The pupils were equal in size and reacted normally, Examination of the fundi showed well-marked double optic neuritis, with much swelling of both discs. Nystagmus was present in all directions, but was more marked when the eyes were directed to the left. With the exception of slightly diminished sensation in the area of the first division of the fifth nerve of the left side, the functions of the cranial nerves appeared normal. There was no paresis of either the arms or the legs. No static tremors were present. On voluntary movement some slight ataxia was observed in the upper limbs. The gait was decidedly ataxic, with a tendency to fall to the left. The tendon reflexes were active. The abdominal reflexes present, and the plantar responses were flexor. The Wassermann reaction in the blood was negative.

A diagnosis of bilateral tumours of the cerebello-pontine angle, probably of the acoustic nerves, was made. Operation was advised, but refused, the patient left the hospital and entered a Poor Law Infirmary, where he became bedridden, totally blind and deaf, and died in February 1920.

Case 2.—Richard 2nd (son of John 2nd), aged 20, was admitted to the Hospital for Epilepsy and Paralysis, Maida Vale, on January 2, 1920. As he was almost completely deaf in both ears, and could neither read nor write, it was impossible to obtain an accurate history of the condition, but it appeared that deafness had been noticed about nine months before and had progressed rapidly. He also complained of constant roaring noises in the head. There was no headache, no vomiting, and no complaint of giddiness or difficulty in walking.

The right pupil was larger than left and reacted briskly to light and accommodation; the left was contracted, slightly irregular in shape, and reacted only very sluggishly to light. There was no nystagmus and no ocular paralysis. The fundi were normal, but there was practically complete bilateral nerve

deafness. With this exception the functions of the cranial nerves were undisturbed. He was examined by Mr. Muecke, who considered that the nerve conduction from the labyrinth was almost completely blocked on both sides, more so on the left. There were no signs of disease in the central nervous system, but there were three subcutaneous tumours which resembled fibromata or neuro-fibromata. These were exceedingly interesting and important, in view of the condition of the auditory apparatus and the family history. In the right side of the neck, underneath the sterno-mastoid muscle, was a large, rather spindle-shaped tumour, about the size of an elongated lemon, extending from the angle of the jaw nearly to the sterno-clavicular joint. It was hard, freely mobile and quite painless. There was no evidence of surrounding inflammation and no enlargement of lymphatic glands. A second, smaller tumour was found in the subcutaneous tissues of the chest wall, just over the right costal margin in the anterior axillary line. It was about the size of a walnut, hard, irregular in shape, freely movable and painless. A third similar tumour, about the size of a small date, was situated in the upper part of the left gluteal region. The patient stated that he had had these tumours as long as he could remember. The smaller one, in the chest wall, was removed under local anæsthesia for histological examination. Dr. Canti reported that it showed the structure of a soft fibroma. It is more than likely, however, that it arose from a nerve sheath, since nerve tissue is not easy to demonstrate in neurofibromata which have been present for a long time. Operation on the skull was not advised.

Postscript.

An autopsy seemed essential to confirm the diagnosis of these remarkable cases. Every arrangement was made before the death of Richard 1st, but the infirmary was some distance away and the practitioner forgot to send information when he died.

I had made arrangements with the matron of the institution in which Richard 2nd died, and one Saturday evening, on returning from a busy two days in London, found a wire announcing his death. The coffin lid had been screwed down, but consent was forthcoming and an autopsy was performed. The cause of death was a

right spontaneous pneumothorax arising from a small tuberculous cavity in the right lung. The tuberculosis was slight in extent. In the cerebello-pontine angle on both sides there was a brain-coloured acoustic tumour. Their surface was irregular, the consistency firm but not uniform, and they were rather friable. The left tumour was somewhat larger than a broadbean and became detached during removal of the brain: the right tumour was the size of a hen's egg and firmly attached to the right internal auditory meatus. Its removal left a bare, roughened area below the meatus measuring $\frac{1}{4}$ by $\frac{1}{2}$ an inch and terminating below in a lip about 2 millimetres high. The portions of the auditory nerve left in the meatus were swollen, and both redder and softer than the other nerves.

So this was a family with a tendency to neuro-fibromatosis, the tumours having a predilection for the acoustic nerve.

CHAPTER XXXV

A SUBJECTIVE STUDY OF ENCEPHALITIS LETHARGICA

Of all chapters this was the most difficult and painful for me to write. It was written, and to be of any value had to be written, during the illness—every sentence, every word an effort. Sometimes only a few words could be put down at a sitting, yet in the end the work was done.

A medical man, aged 47, was attacked on the evening of January 17 with acute coryza. From the evening of the 19th he remained in bed for four days with pyrexia, which reached a maximum of 102° F. on the 20th. On the 21st and 22nd there was effortless morning vomiting, with hardly any nausea; a type which he considered cerebral. The pyrexia subsided, the patient got up on the 24th and was at work again on Monday the 26th, though not feeling really well. Later in the week there was increasing weariness, which, however, could easily be overcome. On Tuesday, February 4, he noticed a visual defect when backing his car; that evening there was marked diplopia and he felt very tired. Having had some experience of encephalitis lethargica, he was already in no doubt as to the diagnosis, but hoped the attack would be abortive. At 9 p.m. he retired, rather uncertain of the morrow, and awoke at 8 a.m. after a heavy but not dreamless sleep, feeling better and without the diplopia for central vision. An ophthalmic surgeon examined his eyes that morning (February 5), and discovered bilateral paresis of the external recti. The night had been spent away from home, and after the eye

examination the patient, although heavy and tired, was able to see several patients and drive his own car sixty-three miles. On reaching home he telephoned to a colleague and retired to bed.

Next day, and subsequently, paresis of accommodation developed, with slight weakness of convergence, and the whole vision became misty. Drowsiness became more marked, with intervening restlessness: tremors, myoclonic movements, muscular inco-ordination and facial weakness supervened. An expert report on the condition about February 19 ran: "I found the patient with the typical Parkinsonian facies, he was very restless and extremely ill and weak." From this time recovery gradually took place; the patient left home early in May and returned to work on August 31, although not absolutely well.

Symptoms.

Mental Condition.—Sleep and restlessness alternated, but drowsiness, sometimes intense, predominated. It was as if control had been removed, upsetting the rhythmic balance which normally prevails between sleep and wakefulness. One condition changed readily to the other; a word spoken, a door opening, sufficed fully to arouse the patient. The awaking was similar to that experienced when one goes to bed longing to snatch some slumber before an inevitable night call; the call comes and you awake, expecting it, and with a certain alertness. The condition was accompanied by profound depression, naturally more marked during the restless intervals.

If unconsciousness did not at once follow closure of the eyes, the mind fell into a hypnogogic state and a variety of pictures and ideas succeeded one another. When awake it was sometimes difficult to sort out reality from imagery, and sometimes confusion arose. For instance: were the children away at school or at home? A moment's normal thought would show that they must be away, but in the patient's mind there was uncertainty.

The restlessness might well be called *impulsive restlessness;* it came on rather suddenly and sometimes subsided rapidly. It made the patient more sympathetic than previously with those cases of impulsive insanity which attain such medico-legal prominence. Suddenly he felt impelled to sit up, move about, get out of bed and walk. By an effort of will and some mental side-tracking the impulse could be overcome, but the effort needed was so great that it caused flushing of the face and sweating; then indeed the impulse might end in a desire to micturate, which compelled rising. The patient discovered that the best way to deal with the condition was to do as do arbitrators, take a middle course, permitting himself a little movement, such as sitting bolt upright or hanging the legs out of bed, but not rising or walking round the room. Apart from this feature, self-control was normal and the patient could converse normally.

In everyday life we all have our days of hebetude, when we appear to ourselves exceptionally stupid. We have also what I have called "mind pockets," that is, when conversing, or perhaps speaking in public, the mind becomes suddenly blank, subject and argument alike forgotten. This is only momentary: a drink of water or a cough fills the gap, and the thread is resumed, but for a moment we have fallen into a "mind pocket." In this illness mind pockets and periods of hebetude became much more marked. The memory also was tricky, though the defect was often only a slowness in remembering, part of a general slowness of thought. Nevertheless, during the illness the patient wrote letters and drew up agenda for meetings, and was only for two or three weeks entirely divorced from mental activities.

There were also occasional aphasic tricks. For instance, speaking to his daughter about two friends seen passing on a tram—"I saw two of your schoolgirls on the top of the pram." The error was pointed out and the patient endeavoured to repeat the sentence correctly, but said the same again and a conscious mental effort was necessary to get the right word. On another

occasion there was no hesitation in beginning a sentence, but one word was repeated several times, e.g., "slim, slim, slim, slim," and then the sentence. The word slim had no obvious relation to the sentence.

Dreams were a medley of incongruities, but two types are worth notice.

One I would call the *single image dream*; it occurred frequently at the height of the illness.

The dreamer sees before him some simple picture; a head, a table, let us say, or a geometrical outline in black on a red ground; there is no action, just this image. Sometimes the head or figure might move a little, occasionally the picture changed to a more usual type of dream, but generally the image remained alone and unchanged.

The second type, which occurred twice, I would call the *apache dream.*

The dreamer stands in a bare room in which there is another individual with his back towards him. To this stranger he bears the fiercest animosity and feels impelled to strike him violently, though there seems no reason whatever for such action. But the dreamer will not strike from behind and waits, speechless with anger, until the stranger turns a leering unpleasant face towards him, when he strikes violently and repeatedly with the greatest relief to his feelings, as great indeed as a long cool drink on a thirsty day. The room in which the encounter takes place is bare, the walls a pale terra-cotta colour, with a crude structure, like a mantelpiece, somewhere beyond the stranger on the left. To the dreamer this seems a kind of pagan altar.

Two other dreams may be mentioned, but they occurred during the patient's convalescence and may have been related to his knowledge of the disease.

One might be called a *larceny dream.*

The patient is young again, he has obtained the key and opened the top of a pillar box. Inside are parcels, which he removes in order to show them to a younger brother; there is no thought of theft and no feeling of turpitude. Later in the dream he finds himself realizing that the action will be considered a theft, and schemes to avoid detection. Another dream contained two rather brutal murders, not committed by

the dreamer but attributed to him. He has no feeling of horror at the crimes, only annoyance and anxiety at finding himself suspected.

Since the illness it has also been observed that dream characters speak more loudly than in the past.

The single image may have been due to sleepiness clogging the machinery of dreaming, or the dream may have originated at a lower brain level than normally. The apache dream suggests an emotional disturbance which did not reach the surface of everyday life.

Impulsive restlessness eased within four weeks; excessive drowsiness continued for about a week longer, but there have been occasional, more or less transient, recurrences.

Eyes.—The paresis of external recti cleared up in two weeks and the paresis of accommodation gradually improved, but some still remains. The mistiness of vision caused objects to appear as if seen through a fog, it came on rather suddenly and cleared up within three months. A candle looked at through the fog would show four, or perhaps six, images, suggesting to the patient a central defect rather than a local paralysis. Before the illness vision with the two eyes seemed equal, but now objects appear rather less bright with the left eye, and on waking especially a slight, rather patchy mist may be noticed in the left eye. At the height of the disease, when the eyes were closed, there once appeared to the left of the visual field a bright rather square light, surrounded by a dark ring. This oscillated rapidly from side to side and then faded. The eyes were red and there was some itching of the lids soon after the onset. The orbicularis palpebrarum was weak; soap got into the eyes when washing and the lower lids sagged a little. There was also a good deal of rapid flickering of the orbicularis, especially when closing the eyes to sleep.

Muscles.—Twitchings, tremors, inco-ordination, weakness and muscle pains were noted. Twitching of the facial muscles was mainly on the left side and involved

chiefly levator anguli oris, levator labii superioris and orbicularis palpebrarum. Tremors of the lips were so noticeable at the height of the disease, that drinking ended in a sound like "wow, wow, wow." There was also general weakness, so that at one stage the mouth dropped open during sleep, and whistling was almost impossible. This faculty has not yet been completely recovered; the lips feel a little woolly, and cigarettes sometimes drop from the mouth.

The *voice* deserves special mention. A feeling of constriction occurred as if some one were gently gripping the thyroid cartilage, and speech became increasingly difficult and uncomfortable; the sensation resembled that which accompanied a slight laryngitis. There was especial difficulty in producing lower tones, but with an effort of will it was sometimes possible to speak normally. During one or two days words would not come in a stream, but were produced singly, each with an effort. These troubles passed in about three weeks, but have recurred transiently from time to time, mainly as a feeling of constriction causing nothing objective.

At the height of the disease there seemed to be some disturbance of the *pharyngeal* mechanisms, and the patient was often roused from sleep by naso-pharyngeal secretion trickling into the larynx. Actions such as hawking seemed a little abnormal. The tongue also was tremulous when used within a month for a period of about ten days.

There were one or two gross *involuntary movements*, say of the forearm, when the disease was at its height, otherwise twitches were mainly fibrillary or fascicular. The left forearm and right leg were mainly affected, but at one time there was a feeling as of a faradic current running over body and limbs. Later there were single twitches, or series of twitchings, varying in strength, reminding the patient of Morse signalling as heard by wireless. Very many muscles were affected, but never the masseter or temporal muscles. The patient was

interested to notice twitching of such muscles as the left tensor tympani which was troublesome at one time; of the right posterior belly of omohyoid, right rhomboideus major, flexor brevis pollicis and coccygeus. The twitching did not run the whole length of the muscle, but was felt almost exclusively at certain sites of election. In the triceps this was at the junction of the middle and lower third; in latissimus dorsi at the level of the lower angle of the scapula; in pectoralis major at the junction of the middle and inner third; in rectus femoris, the femoral adductor group, in tensor fasciæ vaginæ femoris, gluteus maximus and sterno-mastoid all about the junction of the middle and lower thirds; but the site in the left forearm extensor group was in the upper third. A second site in the triceps was very low down on the inner side (just above the epitrochlea), and there was a site very low down in the vastus internus to the inner side of the upper part of the patella.

Twitching was noticed during relaxation and ceased when the muscle actively contracted, recurring sometimes when activity passed. On palpation the affected portion of the muscle was sometimes tender, but this was usually transient. The flickering did not affect function. Single twitches and Morsing still occur, but are variable, being on some days practically absent, and on others obvious.

Tremors were easily perceived at the height of the disease, but later might well be missed without special elicitation. The thumb and little finger were the chief offenders. To elicit the left thumb tremor, the patient held the pronated hand in front of him, thumb hanging below an angle of 60° to the index finger; on gently raising the thumb towards the other fingers, keeping it slightly abducted, tremor might occur. In the right thumb, movements were brought out best by gentle cigarette-rolling movements over the outer aspect of the proximal phalanx of the index finger. Tremor of the ring and little fingers was usually induced by gently touching the tips of the fingers in succession with the tip of the thumb; on reaching the middle finger, the ring and

little finger trembled, and on proceeding to the ring finger the little finger movements increased. Tremor was also induced by flexing the ring and little fingers at the metacarpo-phalangeal and proximal interphalangeal joints, towards the position of a Dupuytren's contraction. A left pronation tremor was best elicited with the patient on his back, hands above the head, palms uppermost; on gently pronating a left pronation tremor resulted.

The tremors were inconstant but the exact conditions determining their presence were difficult to ascertain, especially as there was a tendency to diminish. They were more marked on rising from an afternoon's rest, but quieted or ceased after moving about for a time. Excessive activity or excitement might bring them back.

Some irritant lesion was suggested to the writer as the cause of the tremors, but it seems more likely that a partial nerve block, rather like a heart block, was present and hindered controlling impulses, which, fluctuating in strength as do most impulses, sometimes got through the blockage and at other times failed. Coarser movements occurred just before sleep. Most of us (all perhaps, if carefully observed) have experienced a jerking of the limbs or body just before sleep; the writer nearly always experienced the sudden extension of one or both flexed limbs. It is as if the higher centres slept first, so removing control. During this illness these "slumber jerks" became much more marked and varied. Flexion of a lower limb, movements of thumb or fingers, jerking of head or trunk might occur, and there was a tendency for muscles to jerk which had been specially used during the preceding day. One night, for instance, after some percussion, the right middle finger suddenly gave a spontaneous percussion movement, and on another occasion there was a curious jerk of the right arm slightly forwards and downwards, involving both pectorals and latissimus dorsi; this on reflection appeared similar to the initial action of starting a car. There was also a finger-and-thumb flexion which resembled the movements used in sounding the horn. The patient

named this "twitch photographs." Analysis of other movements might have shown these also to be photographic.

I have watched a dog suffering from "chorea" after distemper, and the flexion and extension jerking of the limbs when the animal was half asleep were very similar to those observed in this case of encephalitis lethargica and in no way resembled the familiar movements of rheumatic chorea.

Pains.—Slow, but transient, localized cramplike pains occurred in the muscles. The whole muscle was very rarely affected, but only an area which felt about the size of a hen's egg which was situated generally, but not always, in the same vicinity as the twitches. The lower limbs were chiefly affected: quadriceps, calf, hamstrings, and adductor groups, usually about the junction of middle and lower third. On palpating the muscle, the affected portion was usually tender, and it was noticed that pressure caused a return of pain after a long latent period of four to ten seconds, especially on the flexor aspect of the forearm, where the site was situated deeply between the bones at the junction of the middle and upper thirds. There were also slow, transient, local cutaneous pains, usually sharp, less frequently burning, and again chiefly on the lower extremities. It was not a painful point but an area, usually one inch in diameter and occasionally rather larger.

Slight *inco-ordination* was noticed, chiefly in complicated finger movements. It was especially to be seen when the patient attempted a "scale," moving the fingers as if playing on the piano synchronously with both hands, five notes in succession up and down. This could not be done; the right hand moved more quickly, while the left frequently played two notes simultaneously, and sometimes the fingers flexed and crumpled up. Later the left hand was noticed to miss out a finger from the scale, usually the ring or index finger. A movement of the right foot, as if to press the accelerator pedal of a motor car, was performed jerkily, and the same occurred in

placing the great and second toes of one foot on either side of the opposite tendo Achillis.

Respiration at the height of the disease was a little hurried, 24 to the minute, and seemed to the patient rather deeper than normal. Now and again, however, breathing became shallow and infrequent, giving the impression of a fitful and irregular Cheyne Stokes' rhythm. About every 100 breaths there was a deeper sighing inspiration. Sighing is still undoubtedly more frequent than before the illness.

Nails.—If more clinical observation was devoted to the nails, our knowledge of medicine would probably increase; the difficulty is to be certain that the nail was smooth and normal before the illness. Fortunately this patient had smooth and normal nails. The effect of the illness was to cause three transverse grooves, separated by an interval of about 1 mm., the last shallower than the two preceding. The whole nail texture below the first groove was thinner, and in some nails there was a little irregular pitting. The middle fingers showed the changes best, and the nail was affected for a distance of about 1 centimetre.

After concussion, this same patient showed a deeper groove on all the nails; a gangrenous appendix caused a broader, shallower groove.

In another patient who attended periodically a series of meetings which entailed considerable mental exertion, it was noticed that the event was marked by a transverse row of white dots on some of the nails. This last observation needs confirmation, but, together with those previously mentioned, suggests that all body tissues react to any disturbance of health, more swiftly and to a greater extent than is generally recognized.

Infectivity.—At the time the patient was attacked, the prevailing "influenza" epidemic was characterized by a rather sudden onset with sickness, giddiness and pyrexia; it was described by one practitioner as "an epidemic of vomiting on the carpet." During the

patient's absence from home on the night of February 4, a daughter, aged 8, slept in his bed, and exactly three weeks later she was suddenly attacked with dizziness, vomiting, pyrexia and a certain amount of lethargy. She recovered in a few days, but a week later developed acute otitis media and a mastoid operation was subsequently performed. Pyrexia did not at once subside, and there was a puzzling congestion round one or the other eye during the illness and subsequently. A few days after the child's illness the patient's wife became affected with a similar "influenza" attack, which was followed by phlebitis, and about the same time an infant, aged 2, vomited rather violently on two successive days, and a third time two days later. In her case, however, there was no alteration in general health, even the appetite remaining unaffected.

About three weeks before his January illness, the patient, late in the afternoon when feeling tired, had seen a young woman suffering from an "influenza" attack accompanied by such prolonged drowsiness that encephalitis lethargica was suspected; she, subsequently, however, made an uneventful recovery. It may be suggested that the patient with whom this paper deals was attacked with two symbiotic organisms, one paving the way for the other, and that the other patients avoided the symbiosis. But it seems simpler to suppose that all cases were due to one and the same agent, and that one of the many causes of the numerous epidemics labelled influenza which sweep over the community, especially in the late winter and early spring, is the virus which occasionally gives rise to encephalitis lethargica. In epidemics accompanied by bronchitis a few fulminating septicæmic pneumonias will be encountered, so it is not surprising that during epidemics in which cerebral symptoms predominate a few instances of encephalitis may occur.

Prognosis.—As in most cases of encephalitis lethargica, this can best be summarized by a quotation: "Oh that a man might know the end of this day's business ere it

comes; but it sufficeth that the day will end, and then the end is known."

Lubbock wrote that one of the "pleasures of being ill" was that it enabled the patient to realize and appreciate his friends. In case the Recording Angel forgets, my grateful thanks are due to many colleagues; to the Bart.'s man who treated the patient with untiring patience and kindness; to the expert (a "London" man) who travelled all night to be there at a critical time; to another old "Londoner" who read to the patient daily and without fail for three months; and to another "London" man who travelled thirty miles on two occasions to offer help.

Postscript.—Three years from this illness the patient is in much the same condition as when the paper was written, and leading an active working life.

At one time a fascicular twitching in the lower left sterno-mastoid and adjoining fibres of pectoralis major was regular—"metronomic" one might say—for a short period, suggesting that the power of spontaneous rhythmic contraction is not confined to the heart. The left flexor brevis pollicis also at one time developed metronomic contractions. An intention tremor is sometimes noticeable, especially when shaving or drawing a straight line. Dream voices are louder than before, daily events seem printed in larger type, the hills are higher and the valleys deeper. There were always attacks of depression, and these are now more pronounced and may come on after a premonitory period or like a bolt from the blue.

One is inclined to advise this patient not to face the situation too squarely, and to envisage, not the shadowy future, but rather the busy present, or even the well-filled past. Prudence and foresight are useful and estimable virtues, but those who exercise them to the utmost do not always escape disaster. Life is a game, and its chief art to turn adversity to good account.

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